



IAALD

International Association of
Agricultural Information Specialists

Quarterly Bulletin

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of the Impact of International Agricultural Research

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INTERNATIONAL ASSOCIATION OF AGRICULTURAL INFORMATION SPECIALISTS (IAALD)

Aims of the Association

The Association was founded in 1955 to promote, internationally and nationally, the professional interests of agricultural information professionals. The word "Agricultural" shall include but shall not be limited to agriculture, forestry, agricultural engineering, fisheries, food and nutrition, agricultural industries, veterinary science, biotechnology and rural development. The IAALD membership is about 600, drawn from eighty countries. Activities include a General Assembly (at least once in five years), annual meetings of the Executive Committee and meetings of the Working Committees as occasion demands, and the issuing of publications in the field of agricultural information: bibliography, documentation, and librarianship.

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Institutions: £40 or \$80 (US) Individuals: £15.00 or \$30 (US)

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of Agricultural Information Specialists

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with the assistance of
Amélie E. M. Charron

Instructions to Authors

The *Quarterly Bulletin of the International Association of Agricultural Information Specialists (IAALD)* accepts articles that are of professional interest to the broad group of IAALD members and readers of the *Quarterly Bulletin*. Articles should be of regional concern and research should be statistically valid and replicable with the results of broad applicability. Articles submitted will go through a blind review process with an independent reviewer and will be returned to the author for corrections and modifications if necessary. Manuscripts not accepted for publication will not be returned to the author. Electronic submissions are welcome if fully IBMPC compatible on either 5 1/4 inch or 3 1/2 inch diskette. Articles can be accepted unformatted in an ASCII file or in Word Perfect 5.xx, WordStar 4.0 or higher, MultiMate, Microsoft Word, or DisplayWrite (RFT format only). Graphic images may also be sent electronically but the editor must be notified prior to submission to verify that the format is acceptable. Hard copy is required and should accompany the disk.

All *Quarterly Bulletin* articles are published with a specific tabular style and follow bibliographic conventions as

listed in the *Chicago Manual of Style* 13th edition. References should be complete and tables should comply with the editorial style represented in the *Quarterly Bulletin*. Two copies of all articles must be submitted with an abstract in English of 150 words or less. Additional abstracts in French, Spanish or German are welcome. Articles submitted should be accompanied with the institutional affiliation and address of each author as well as a brief biography and photograph.

News in the field of bibliography and documentation of agriculture and allied subjects is welcomed. Letters to the Editor will also be published in the *Quarterly Bulletin*. These items will be accepted in English, French, German, or Spanish. News items can also be submitted electronically via BITNET at the editor's address.

Please send all manuscripts by AIR MAIL directly to the Editor:

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A Note about Reviewing

Interested in reviewing for the *Quarterly Bulletin*? We are particularly interested in having reviewers from developing countries but would welcome anyone who is willing to donate the time. You can expect to review no more than three articles a year and must be willing to abide by the deadlines established. The goal is to give feedback to the authors or accept the article for publication as quickly as possible to make both the feedback to the authors and the issues timely.

This is an excellent way to serve both the organization and the profession without leaving your home town. If you are interested in more information or in signing up, please contact the editor at the address given on the editorial page.

I would like to thank the following people who are donating their time and talent to this process. They have worked hard on your behalf during this past year.

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Rothamsted International Formed
U.S. State Fact Sheets by FAX Now Electronic
Foundation for Sustainable Development in Africa
SIGCAT'95 Held
ICARDA Update
IIED, WRI, and IUCN Collaborate on INTERAISE
Fifth Conference of Librarians in International Development to be Held
AAAS Sub-Saharan African Program Aids Libraries
Ag.ROUND
CIAT Publishes IPRA Handbooks
INTERPAKS Short Courses
LC Promoting the National Digital Library
INASP Databases Ready for Distribution
African Journals Distribution Programme (AJDP) Now Established
Shipping Guidelines Leaflet Published
Water Quality Information on the Internet
USAID Update
Melbourne Free-net is Up and Running
International Special Librarians Day Planned in the US

News from CABI

DOCUMENTS NOW Available
Placements in Information Management
CABI Phone Numbers to Change

News from NAL

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Global Change Database Available at NAL
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From the Editor's Desk

This is my first communication with you since assuming the editorship of the *Quarterly Bulletin* for the next five years. Below is a report given to the General Assembly in Melbourne in January of 1995.

In October of 1990 I set forth a five year agenda for the *Quarterly Bulletin* and communication with the organization. Items on that agenda were

- Improving the quality of article stock
- Publication of Proceedings of IAALD Meetings
- Increase articles in French and Spanish
- Publication of a membership directory
- Publish the constitution separately in four languages
- Report of the business of the organization

I am happy to report that most of the agenda items have been accomplished in some fashion. The quality of article stock has been improved by the addition of a core of reviewers to read and make recommendations on submitted articles. All articles published in the *Quarterly Bulletin* are read by an independent reviewer and the editor. The philosophy of taking IAALD meetings to the membership has also been accomplished by the publication of three proceedings volumes. Papers have been published from the VIIIth World Congress and two technology symposiums sponsored by IAALD during the past five years. Increased publication in articles in languages other than English has not been achieved as hoped. During the past five years two articles in other languages were submitted and sent out on review. The paper submitted in Spanish was reviewed and returned to the author for revision. That paper was published in *Quarterly Bulletin* v. 38, no. 4, 1993. The paper submitted in French was also reviewed and returned to the author for revision. The author did not respond. News items in Spanish and French have been published when submitted in that language and activities of the IAALD Francophone group were reported in a special supplement in French in *Quarterly Bulletin*, v. 38, no. 4, 1993. A membership directory was published in v. 36, no. 4, 1991 but did not contain e-mail addresses. The membership form has been modified to get e-mail addresses of new members but we are still lacking e-mail addresses for long standing members. The constitution did get published in four languages and organization business appears in the issues on a regular basis.

Other changes that have taken place have been the addition of the CDS/ISIS User to User Column as a regular feature. At the VIIIth World Congress of IAALD the membership expressed a need for this type of information. Hugo Besemer of PUDOC came forward to moderate a column and became the chief author. Hugo has contributed six columns over the past three years.

From June of 1990 through December of 1994 approximately 1300 pages have been typeset and published for the *Quarterly Bulletin*. This translates into approximately 4000 manuscript pages that have been handled by the production staff. This publication would not be possible without a large number of people contributing their time and talents. At this time I would like to thank the reviewers that are listed in the front of each issue as well as the language editors. The authors deserve special mention because they have diligently took the recommendations of the reviewers and improved their articles. The translators of the abstracts deserve a special mention. These people translated 157 abstracts into French, German, and Spanish. Marie-Josée Jehl has provided the French abstracts, Wolfrudolph Laux has provided the German abstracts, and Lynne Menéndez at the Translation Unit at CIAT has provided the Spanish abstracts. This is a time consuming task and these people met their deadlines to make the *Quarterly Bulletin* as useful as possible.

The next five years will be challenging. Costs continue to rise especially in postage and it becomes more difficult to get the *Quarterly Bulletin* out. A membership survey was conducted and only 10% of the membership replied. The major problem with the *QB* from those who responded was the timeliness of the delivery of the *Quarterly Bulletin*. During the next year alternative delivery systems will be looked at to deliver the *Quarterly Bulletin*.

The existence of the *Quarterly Bulletin* depends on all of you. Without your contributions the *Quarterly Bulletin* will cease to exist. One complaint was lack of articles on specific subjects. If no one is willing to write the article, then the information will not get published. Each member needs to be looking for articles that would be of interest to the readership. Any article is looked at and reviewed. We need your help to keep the *Quarterly Bulletin* a viable publication with useful information.

The next issue of the *Quarterly Bulletin* will focus on IAALD as an organization. IAALD will be 40 years old in September of this year. To commemorate this event, *Quarterly Bulletin*, v. 40, no. 2 will be an anniversary issue of the organization. The focus of the issue will be on where we have been which will hopefully help guide us on which way to go.

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Citations to Journal Articles as "Delayed Indicators" of the Impact of International Agricultural Research

John E. Woolston

Keywords: scientific and technical information; information dissemination; evaluation

ABSTRACT: An attempt has been made to use citations to assess the impact of 82 articles published from CIMMYT in the period from 1967 to 1978. The context of each of 769 citations was examined. Estimates of impact based on the mere counting of these citations would have been misleading. By seeing each citation in its context, a qualitative assessment of how the scientific community has reacted to the cited article can be done. Contributions on the same subject for other authors and institutions are recognized. The chronology of the citations suggests that, except in a minority of cases, the reactions are slow to mature and their main trends may not be seen in the literature until 5 to 7 years after the publication of the original articles.

RESUMÉ: Une tentative a été faite d'analyser l'impact de 82 articles que le CIMMYT a publiés entre 1967 et 78, en se basant sur les citations. Le contexte de chacune des 769 citations a été examiné, car les estimations de l'impact, se basant seulement sur le nombre de ces citations, auraient été trompeuses. Cependant, en voyant chaque citation dans son contexte, une analyse qualitative de la réaction de la communauté scientifique à l'article cité, peut être faite. Les contributions sur le même sujet pour d'autres auteurs et institutions, peuvent être identifiées. À part quelques rares exceptions, la chronologie des citations suggère que les réactions évoluent lentement, et qu'il faille attendre jusqu'à 5 à 7 ans après la publication des articles originaux, avant d'être très souvent cités dans la littérature.

RESUMEN: En este trabajo se intentó utilizar las citas bibliográficas para evaluar el efecto producido por 82 artículos del CIMMYT publicados en revistas científicas

durante el período de 1967 a 1978. Se encontraron 769 citas y se examinó el contexto de cada una de ellas. Se hubieran obtenido resultados falsos si el efecto de los artículos se hubiera estimado con base en el simple recuento de tales citas. Por el contrario, al considerar cada cita en su contexto, fue posible lograr una evaluación cualitativa de cómo la comunidad científica ha recibido el artículo citado y, al mismo tiempo, enterarse de los trabajos que otros autores e instituciones han publicado sobre el mismo tema. La cronología de las citas indica que, salvo en unos cuantos casos, las reacciones a los artículos surgen lentamente y que, en ocasiones, las tendencias de esas reacciones no se aprecian claramente en la literatura hasta cinco o siete años después de la publicación de los trabajos originales.

ZUSAMMENFASSUNG: Der Versuch wurde unternommen, Literaturangaben zu nutzen, um den Einfluß von 82 Artikeln, die von CIMMYT in der Zeit zwischen 1967 und 1978 veröffentlicht worden sind, zu bewerten. Der Kontext aller 769 Literaturangaben wurde untersucht. Bewertungen eines Einflusses, der auf bloßen Zahlen dieser Literaturangaben basiert hätte, würden zu falschen Schlüssen geführt haben. Bei Betrachtung einer jeden Literaturangabe im ihrem Kontext ist jedoch eine qualitative Bewertung darüber möglich, wie die Wissenschaftler auf die zitierten Artikel reagiert haben. Beiträge zum gleichen Thema für andere Autoren und Institutionen wurden festgestellt. Die Chronologie der Literaturangaben weist darauf hin, daß—von wenigen Ausnahmen abgesehen—die Reaktionen langsam reifen und Literatur nach ihrem Haupttrend erst fünf bis sieben Jahre nach der Veröffentlichung des Originalartikels auftaucht.

Citations can be only one indicator of the scientific achievements of an international agricultural research cen-

ter. To evaluate the performance of such a center, reviewers are more likely to ask: Are farmers growing the products of its plant-breeding programs? Have other institutions adopted its research procedures and do they participate in its networks? Have its trainees succeeded to positions of responsibility in their own institutions? Achievements such as these are the tangible benefits that sponsors expect from their investments in applied research, but any research institution also needs to earn and retain recognition for its contributions to the scientific literature. Scientists everywhere are sensitive to the comments and opinions of their peers, and such comments are committed to the permanent record when they also appear in journal articles and are given in the context of citations.

After *Science Citation Index* came on the market in 1961, many scientists and their administrators began looking for ways to use this database to help in evaluating the impact of research (see, for example, Wade 1975). Others, however, have warned of the pitfalls of relying on a mere counting of the citations accorded to a particular article, and especially of using a cumulative number of citations to compare the relative worth of different articles, authors or institutions (for example, Anderson 1991).

Nevertheless, *Science Citation Index* (SCI) and its companion *Social Science Citation Index* (SSCI) do provide a means for locating citations: by reading the citing articles, we can find the substance and the

context of their references to a cited article. Thus, with some effort and access to an extensive journal collection, it is possible to work through the literature, find out what citing authors have contributed to the on-going scientific discussion, and obtain a qualitative indication of the impact of the cited article.

The substance and context of citations has been recorded for those journal articles that describe research carried out as part of the program of the Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT) and that were published in the period 1967–1978; by taking these older articles, we could follow their citation records for a full 15 years. One interesting by-product of the compilation has been to see how many years elapsed after the publication of an article before the significant citations began to appear and then to peak. Clearly, an author—and that author's administrator—should wait long enough before making a judgement on the impact of the work that he or she has published. But, normally speaking, how long does one need to wait? For science generally, the answer almost certainly depends on the subject field and on the type of research that is reported: basic or applied, theoretical or experimental. It must be emphasized that the indications presented here reflect only the experience of one international institute engaged in crop-oriented research with special emphasis on the needs of developing countries.

The Set of Cited Articles

First, it was necessary to identify all the journal articles resulting from CIMMYT's program and published in the period under study. We began by looking for articles published by scientists who had been employees of CIMMYT. However, many of the eligible articles were written by individuals who had worked at CIMMYT, not as staff, but as graduate students or on secondment from cooperating institutions; quite often,

the articles were published only after these associations had ended. Indeed, the stated addresses and affiliations of authors can be quite unreliable as guides to the original institutional responsibility. We needed to scan many articles to find out where the research had actually been done, and these articles were added to the CIMMYT list only if the narrative indicated that the work had been wholly or partly supported by CIMMYT through the commitment of its staff, research facilities, or funds.

Also, in order to focus on the impact of CIMMYT's most considered products, articles were retained on the list only if there was evidence that they had been subject to independent peer review as part of the journal's editorial process. Thus, we eliminated almost all conference papers published in the special issues for which journal editors waive their usual review procedures: for example, those in the annual proceedings issue (no. 5) of the *American Journal of Agricultural Economics*. A conference paper was retained only if the journal carried an explicit indication that it had received the normal peer review, typically by giving separate dates for received and accepted.

The resulting set of CIMMYT articles is made up of 82 publications. Of these, 25 describe work carried out in cooperation with advanced research institutes, mainly in the United States, Europe, Australia and Japan; another 29 describe work carried out in cooperation with scientists from developing countries.

The majority of the 82 articles appeared in journals published in industrialized countries (United States, Europe, Japan, Australia), but 28 were in national journals published in developing countries (Mexico, India, Peru). Searches in SCI and SSCI revealed far fewer citations for those in the second group, but this should not be seen as evidence of diminished impact. Articles in developing-country journals are more likely to be cited by other articles in developing-country journals which,

by and large, are not covered by SCI and SSCI. And, on occasion, CIMMYT needed to target the results of its research to a particular region or a particular language-group: it could do so more effectively either by distributing its own imprints or by contributing articles to a local journal that would be available in developing-country libraries. The so-called international journals are often priced beyond the resources of these libraries.

As previously indicated, whatever the journal, there was evidence that every article had been subject to independent peer review, and the entire set of 82 articles was used in the study reported in the subsequent sections of this paper.

The Sets of Citations

Most of the searches were carried out on-line with the Dialog implementation of SCI; for pre-1974 citations, we used the printed version of SCI. Articles that focused on economic or socio-economic issues were the subject of on-line searches in SSCI and, in a few cases, both databases were used.

The references to citing articles were downloaded for subsequent reading and, for each cited article, the set of citing articles was supplemented with any additional references that we had happened to find in the course of other work. For each of the 82 CIMMYT articles, we took the citations that had appeared within 15 calendar years of the date of its original publication. Altogether, 1134 citations were collected; however, not all of these could be considered eligible for the compilation.

Since the object of the study was to discover what notice other scientists had given to CIMMYT's work, we first eliminated all personal self-citations and institutional self-citations. Personal self-citations occur when any author of the citing article is also an author of the cited article (147 citations eliminated). Institutional self-citations occur when the citing article is from CIMMYT or from an institution that cooperated

with CIMMYT in the work described in the cited article (72 citations eliminated).

CIMMYT is concerned with research on the production and use of maize and wheat, as well as on social and economic issues related to these crops. In publishing research articles, the primary target audience is made up of all those other scientists outside CIMMYT that are also engaged in research on these topics. It is gratifying when CIMMYT's work is cited in articles reporting research on, say, cabbage or coconut; however, since the cabbage and coconut researchers are not in the intended target audience, we have eliminated their citations from our compilation. We have discarded all citations appearing in articles that focus on crops of no direct interest to CIMMYT (137 citations eliminated). Finally, since the compilation is intended to record citations made in a substantive context, we have little interest when the citation merely notes the existence of a CIMMYT article, and this can happen when the cited article is a review rather than a report on a specific piece of research (9 citations eliminated).

After the eliminations, the original combined total of 1134 citations reduces to 769. These are defined as the significant citations, in that they may indicate an impact of CIMMYT's work in the external maize/wheat research community. The most-cited CIMMYT article received 72 significant citations, but there are also 27 articles for which no significant citations were found; the dis-

tribution between these extremes is shown in Table 1.

Distribution of Significant Citations in Time

Each article, cited or citing, is associated with a publication year, which is that given by the date on the journal in which it was published. Each citation is identified with an elapsed time; this is the difference between the publication years of the cited and citing articles, and it is always a whole number. Thus if the cited article was published in 1978, the elapsed time can be any integer between zero (citing article also published in 1978) and 15 (citing article published in 1993). For the purposes of this paper and to ensure comparability, citations were recorded only through year 15 which means that, for a CIMMYT article published in 1967, the totals include only those significant citations published through 1982.

For the most-cited article (72 significant citations), the citation record shows random fluctuations from year to year, but these impose on an overall rising profile which reaches its maximum of 11 signifi-

cant citations in each of years 13 and 14. On the other hand, the second most-cited article (64 significant citations) exhibits a peak of 12 significant citations in year 7, with a fairly steady decline thereafter. Perhaps more typically, a first peak around year 3 or 4 is followed by a second peak about 5 years later. However, many of the less-cited papers show a pattern of delayed recognition, and they end the 15 years on what appears to be a rising trend of significant citations. There is no uniform pattern: while one is tempted to break down the results and, for example, to group the cited articles according to early or late development, such efforts could easily bias the conclusions.

Pooling all significant citations to all 55 cited papers gives the result shown in Figure 1. Here one sees the first peak at year 3 (consistent with the findings of Balog 1980), a somewhat smaller second peak at years 7-9, and the rising trend at the end of the period of data collection. However, what is most interesting is the durability of the attention given to CIMMYT's articles: after the sharp rise to the initial peak, the annual aggregate number of significant cita-

Figure 1 - Pooled results for 55 CIMMYT articles that each received one or more citations in the 15 years following publication

Aggregate number of significant citations

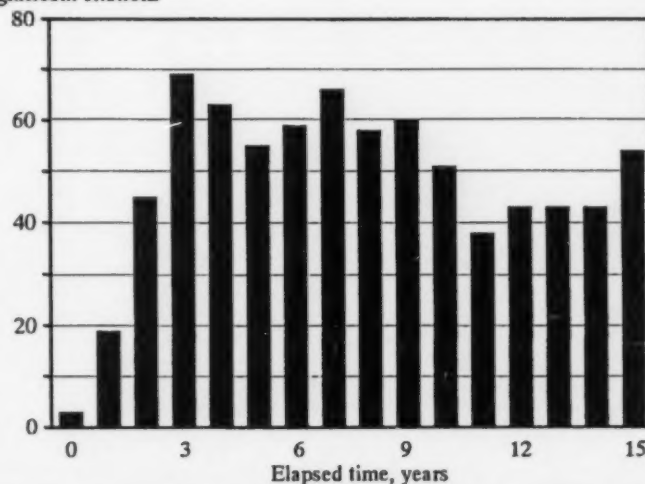


Table 1 - Accumulated citations (15 years) to 82 journal articles from CIMMYT

No. of significant citations per article	No. of CIMMYT articles
None	27
From 1 to 3	16
From 4 to 9	11
From 11 to 15	9
From 16 to 22	11
From 26 to 72	8

tions is remarkably well sustained for the ensuing 12 years.

Determination of Impact

In recording the substance of nearly 800 citations, we have seen great diversity in the reasons that lead one author to cite another. No one should imagine that all citations are of comparable weight; and the very different weights need to be taken into account in any attempt to determine impact.

As an example, let us take a much-cited CIMMYT article (37 significant citations) which was published in 1976; it gave experimental evidence to suggest a technique for selecting desirable progeny in the early generations after a wheat cross, thus perhaps reducing the amount of work required to develop an improved variety. Other research groups seized on the idea and started their own tests of the technique (that is certainly "impact" at the initial level). As the years went by, some researchers reported corroboration of the results, while others found that the technique failed with their own

material. The see-saw nature of these reports tended to promote even more citations; so, only in very recent years, would it have been possible to judge whether the CIMMYT article had helped—or, perhaps in some cases, even hindered—the efforts of wheat breeders in various parts of the world.

Of course, one does not always need to wait 15–20 years before assessing the impact of a given publication. But, certainly, it would be prudent not to base a judgement on the context of the first citation that appears. For the purpose of the present discussion, let us assume that an author, or an administrator, would be able to deduce a trend after reading the first five citations. Figure 2 has been prepared to indicate how long one would have had to wait for the appearance of the fifth citations to the more-cited individual papers in the set that was the subject of this study.

At the end of year 2, only four papers had received five citations. At the end of year 3, ten papers had received five citations, but there was one that had still not received its fifth citation even though it was destined

to receive 40 in the whole 15-year period. One would have needed to wait until the end of year 5 to catch all the papers that were destined to receive 20 or more citations, and those destined to receive 10 or more citations did not all receive their fifth citations until year 7.

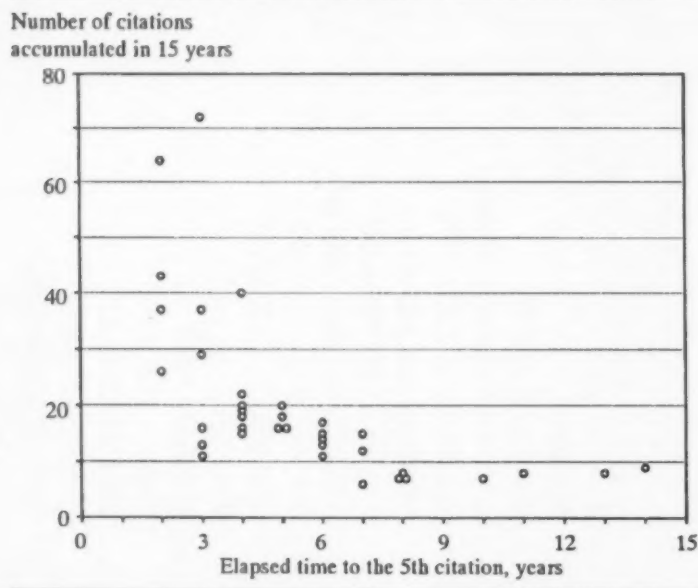
Why such delays? Perhaps, as much as anything, it is the time needed to complete field experiments. Agricultural researchers are normally expected to obtain results from at least two seasons, and more would be better. So, starting with a new idea or a new technique, it is unlikely that it can be tested, the results analyzed, and the conclusions published in less than three years.

Conclusions

Certainly, if read in their contexts, citations can tell us how the scientific community is reacting to the publications of a researcher or a research institution. Hence, in principle, they can be the key to producing useful feedback to an author, an administrator or an evaluator. But many research programs operate on three- or five-year planning cycles, and this span is a little short compared with that required for the citation process to return reliable evidence.

One can argue, of course, that citations are not the only mechanism that provides feedback on a given piece of research. The authors receive letters and e-mail; they attend meetings at which follow-up research is presented and discussed; their colleagues continue to express interest, or they fall silent and talk about other things. However, there is something special about the statements that accompany citations, particularly when they are made in articles that have themselves been subject to peer review. The process ensures that there is nothing hasty about these statements; they have been carefully considered and represent a point of view that the citing author, if challenged, is obliged to substantiate. They merit the attention of the cited author, as well as anyone

Figure 2 – Each point represents a CIMMYT article that received 5 or more citations in the 15 years following publication





Born and educated in England, **JOHN E. WOOLSTON** emigrated to Canada as a young man. His university training in physics (London and Paris) led him into the Canadian atomic energy program (1953–1967), after which he joined the International Atomic Energy Agency (IAEA Vienna) as Director of the Division responsible for the design and initial implementation of the International Nuclear Information System (INIS). Returning to Canada in 1970, he became Director of Information Sciences with the newly created International Development Research Centre (IDRC)

and also served as Chairman of the two FAO committees that planned the start-up of AGRIS. Leaving IDRC in 1985, John Woolston has had two post-retirement positions, one as Program Leader for Scientific and Technical Information with the International Center for Agricultural Research in the Dry Areas (ICARDA Aleppo, Syria) and now as Visiting Scientist with CIMMYT.

else (administrator, evaluator) who is required to judge that author's contributions.

Conscientious scientists need to check their citations every couple of years, not only to learn how their peers have reacted to their work, but also to discover what contributions these other scientists have made on the same topic. Administrators and evaluators should not expect citations to give a quick indication of impact: probably they need to wait until at least five independent citations have appeared before assessing the significance of the citing authors' reactions to the original articles; however, in the experience of CIM-

MYT (data of Figure 2), the median waiting-period for the fifth citation is in the order of five years. Not many administrators and evaluators can afford to be so patient, and they are likely to use other mechanisms to obtain independent assessments of their research programs, e.g. by external reviews.

On the other hand, those managers who are ready to review research in a longer time-perspective would be well advised to call up the citations to articles published even 10 or 15 years ago. This study (data of Figure 1) shows that the scientific community maintains an abiding interest in CIMMYT's older work, and the

citing articles often provide illuminating comment on the relation between older and more recent research results.

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Monitoring Publication on Lake Kainji in Nigeria: Librarian's Approach

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Keywords: *information dissemination; scientific research; publications; Nigeria*

ABSTRACT: Publications on Lake Kainji from 1961 to 1991 were studied and results showed a peak of publication in 1975 with 27 publications produced, closely followed by 1970 with 25. Five journal titles were identified as the "core" titles in which scientists who work on the lake publish their work. Seventeen broad subjects in the areas of fisheries, aquatic sciences and socio-economics were identified as areas covered. Out of 335 publications identified, 255 were by a single author; 56 by two authors; 8 by three authors; 6 by four authors and 10 by institutions. The study revealed the need for multi-disciplinary approach to research work on the lake, because such coordinated researches make results and repackaging of information more acceptable. Thirty-three titles were also identified as publishing articles on Lake Kainji. Sixteen of these titles were indexed by *Aquatic Sciences and Fisheries Abstract*. Out of the 17 titles not covered, 9 were published in Nigeria. This showed that there is a poor coverage of journal titles produced in developing countries by international abstracting journals. It is recommended that for international visibility of scientists working on the lake, effort should be concentrated at publishing in internationally reputable journals, because this medium lends itself to an international alerting services.

RESUMÉ: En étudiant les publications sur le lac Kainji entre 1961 et 1991, l'année 1975 fut la plus fructueuse avec 27 publications, suivi de 1970 avec 25 publications. Cinq titres de revues ont été identifiés comme revues fondamentales, dans lesquelles les scientifiques qui travaillent sur le lac, publient leurs travaux. Dix-sept sujets qui traitent de la pêche, des sciences aquatiques et socio-économiques ont été identifiés. Sur 335 publications relevées, 255 ont été écrites par un seul auteur, 56 par

deux auteurs, 8 par trois auteurs, 6 par quatre auteurs et 10 par des institutions. L'étude met en évidence le besoin d'une approche multi-disciplinaire pour les travaux de recherche sur le lac, puisque une telle coordination de la recherche rend les résultats et le reformatage de l'information plus acceptables. Trente trois titres ont aussi été identifiés comme publications sur le lac Kainji. Seize de ces titres ont été indexés par la revue analytique *Aquatic Sciences and Fisheries Abstracts*. Parmi les 17 titres non indexés, 9 ont été publiés au Nigeria. Ceci démontre qu'il y a, dans les revues analytiques internationales, une très mauvaise couverture des titres de revues produites dans les pays en développement. Il est recommandé que les efforts se concentrent sur la publication dans des revues de réputation internationale afin d'avoir une meilleure visibilité internationale des scientifiques faisant de la recherche sur le lac, et ainsi avoir accès aux revues analytiques internationales.

RESUMEN: Trabajos publicados sobre el Lago Kainji desde 1961 hasta 1991. El estudio indicó que en 1975 se presentó un pico en la publicación de trabajos, con 27 escritos, seguido de cerca por otro pico en 1970, con 25 publicaciones. Cinco títulos de revista se identificaron como títulos "básicos" en los cuales los científicos que trabajan en el área del lago publican sus trabajos. Estos trabajos cubrían 17 áreas temáticas amplias en las áreas de pesca, ciencias acuáticas y socioeconomía. De las 335 trabajos identificados, 255 fueron escritos por un mismo autor; 56 por dos autores; 8 por tres autores; 6 por cuatro autores y 10 por instituciones. El estudio indicó la necesidad de aplicar un enfoque multidisciplinario al trabajo de investigación en el área del lago. Un trabajo de investigación que se realiza en forma coordinada hace que los resultados y el repaquete de la información sean más accesibles. También se identificaron 33 títulos que publicaban artículos sobre el Lago Kainji. De éstos, 16 están indexados en *Aquatic Sciences and Fisheries Abstracts*. De los

17 títulos que no están cubiertos por este servicio, nueve se publican en Nigeria. Esto indica que es deficiente la cobertura de los títulos de revista publicados en países en desarrollo por las revistas internacionales de indización. Para mejorar la visibilidad internacional de los científicos que trabajan en el lago, se recomienda concentrar esfuerzos en publicar escritos en revistas de prestigio internacional porque este medio sirve como un servicio de alerta internacional.

ZUSAMMENFASSUNG: Veröffentlichungen über den Kainjisee zwischen 1961 bis 1991. Die Ergebnisse zeigten 1975 eine Veröffentlichungsspitze mit 27 Publikationen, dicht gefolgt von 1970 mit 25. Fünf Zeitschriftentitel wurden identifiziert, in denen Wissenschaftler, die über den See arbeiten, hauptsächlich ihre Arbeiten veröffentlichen. 17 allgemeine Themen auf dem Gebiet der Fischerei, der Aquawissenschaften und Sozioökonomie sind als behandelte Bereiche zu nennen. Von 335 Publikationen hatten 255 nur einem einzigen Autor zum Verfasser, 56 hatten zwei Autoren, 8 drei Autoren, 6 vier Autoren und bei 10 wurden Institutionen als Autor genannt. Die Untersuchung zeigte die Notwendigkeit, interdisziplinär über den See zu forschen, weil solche koordinierenden Forschungsarbeiten dazu beitragen, Ergebnisse und Informationsneubelegungen akzeptabler zu machen. 33 Titel waren Verlagsartikel über den Kainjisee. Auf 16 dieser Titel wurde in den *Aquatic Sciences and Fisheries Abstract* hingewiesen. Von den nicht in den Abstracts erschienenen 17 Titeln wurden 9 in Nigeria veröffentlicht. Dies wies auf eine geringe Registrierung von Zeitschriftentiteln, die in Entwicklungsländern erscheinen, durch internationale Abstractzeitschriften hin. Es wird empfohlen, daß zur internationalen Wahrnehmung der über den See arbeitenden Wissenschaftler die Anstrengungen darauf konzentriert werden sollten, in international anerkannten Zeitschriften zu veröffentlichen, weil sich dieses Medium für international rasche Dienstleistungen eignet.

Introduction

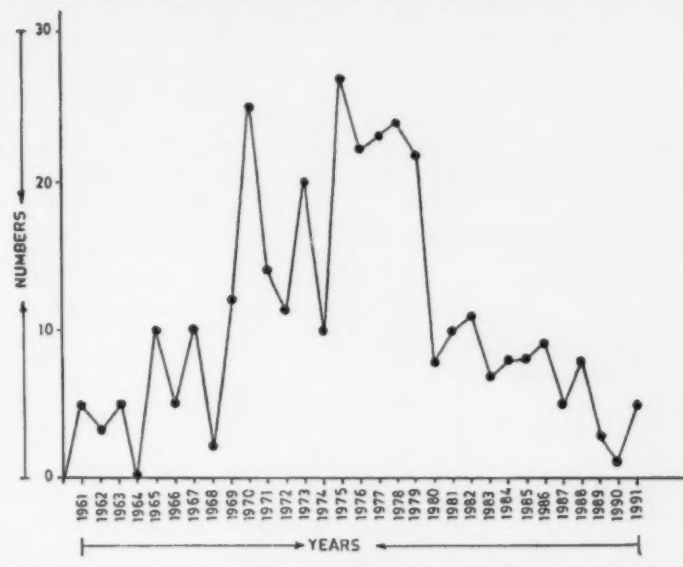
Kainji, a man-made lake created in 1968, is located on River Niger between latitude 9°5' and 11° and covers an area of 1280 sq km. The primary purpose of the dam is to provide economic electrical power for the people of Nigeria. It also has additional benefits derived mainly from navigation, flood control and fishery production. The objective of fishery research on Lake Kainji is to assist the government of Nigeria in investigating the abundance and distribution of commercially important fish and propose solutions for major problems that may limit production.

Over the years, numerous publications have been produced on Lake Kainji (Ibeun, 1979¹, 1989a²; Visser, 1970³; and Johnson, 1973⁴). The essence of published works is to indicate visibility whereby scientists justify their activities. It is through such visibility that scientists report their research findings to other members of the scientific community. Apart from communicating with fellow scientists, compilation of such works has been a useful source of data to evaluate the discipline (Ibeun, 1987⁵). A study was conducted on the international visibility of work carried out on Lake Kainji by analysing the literature produced by scientists who have worked on the lake, and to determine the subject coverage of such work.

Literature Review

The earlier bibliometric studies, Cole and Eales (1917)⁶, Hulme (1923)⁷, and Lotka (1926)⁸ were based on bibliographies. The bibliography has to be a systematic compilation of literature in a given field. Such analysis may include authors, periodical titles, publishers, year of publication, coverage and so forth. The first people to use this method were Gross and Gross (1927⁹). Since Aiyepoku's work (1973)¹⁰ on bibliometrics of the geographical literature of Nigeria, many other writers have applied the same methodology to other disciplines as they affect the Nigerian

Figure 1 – Publication activity on Kainji Lake (1961–1991)



situation. (Lawani 1973¹¹, 1974¹²; Afolabi 1975¹³, 1977¹⁴; Alabi 1980¹⁵; and Ibeun 1987⁵).

Earlier work of Ibeun (1987)⁵ showed that publication in animal science was distributed as follows: journals 72.1%; books/proceedings 15.3%; thesis 8.1%; technical reports 3.7%; annual reports 0.5%; newsletters 0.3%. Eng and Maclean (1986)¹⁶ in a report of a study on scientific research in Asian Fisheries Development, found that publication was done in annual reports 4.5%; book/ book chapters 1.3%; extension materials 2.1%; monographs 2%; proceedings 20%; reports 35.6%; scientific articles 19.1% and semi-technical articles 15.1%. Result studies such as these have been a useful tool for librarians in understanding the discipline and for the scientists in knowing the depth of work carried out in the different facets of a given discipline.

Methodology

Two Decades of Kainji Lake Research: A Multi-Disciplinary Bibliography by M.O. Ibeun (1989a)² contains a list of works on Kainji Lake basin. The bibliography covers the following disciplines: limnology,

fisheries, wildlife, range management, agriculture, economics, sociology, and public health. Three hundred and thirty five entries which were specifically carried out on Lake Kainji which were related to fisheries were extracted and formed the basis of this analysis. For each entry, the date, and type of publications and disciplines were identified. Pattern of authorship and works which are multi-disciplinary in nature were sorted out to determine the level of multi-disciplinary approach to research on the lake. Journals identified were cross-checked for coverage by *The Aquatic Sciences and Fisheries Abstract*. This was done by scanning the list of journals covered as listed in the publication titled *Serials Monitored for ASFIS Bibliographic Database* published in 1988. Brookes's (1969)¹⁷ formulation of the complete Bradford distribution was used in determining the core journals.

Trends of Yearly Publications

Figure 1 shows annual publications on Lake Kainji from 1961–1991. The highest number of publications were recorded in 1975 with 27 publications of which 4 were

journal articles, 17 conference proceedings, 4 technical reports and 2 unpublished reports. This is closely followed by 1970 with 25 publications which were made up of 5 journal articles, 9 proceedings, 6 technical reports and 4 unpublished reports. The publication years 1976

Table 1 – Format of Publication

Format	No.	% of Total
Journals	98	29.3
Conference Proceedings	88	26.3
Unpublished Reports	42	12.5
Annual Reports	41	12.2
Technical Reports	29	8.6
Theses	19	5.7
Feasibility Studies	10	3.0
Newsletters	8	2.4
Total	335	100.0

Table 2 – Subject Coverage

Subject	No. of Occurrences	% of Total
Biology/Ecology	92	27.46
Limnology	59	17.61
Population Dynamics	50	14.93
Socio-Economics	22	6.57
General	20	6.10
Aquatic Microphyte	20	6.10
Hydrology	17	5.07
Fish Processing	14	4.18
Statistics	8	2.39
Parasitology	8	2.29
Fishing methods	7	2.09
Aquaculture	5	1.49
Bibliography	5	1.49
Boatbuilding	3	.90
Marketing	2	.60
Pollution	2	.60
Review	1	.30

Table 3 – Pattern of Authorship of Publication on Kainji Lake 1961–1992

Pattern	No.	% of Total
Single authorship	255	76.12
Two authorship	56	16.72
Three authorship	8	2.39
Four authorship	6	1.79
Institution	10	2.98

and 1977 had the highest number of journal articles recording 11 publications each. In 1988, there were 8 publications; a bibliography, and articles on aquatic plants. There was only one publication in 1990 relevant to Kainji Lake and this was published in the *Annual Report of the National Institute for Freshwater Fisheries Research* but the report was on aquatic birds of Lake Kainji. Five publications were identified in 1991. These were annual report publications which centered on socio-economics and pest infestation of fish.

From the above analysis indicates a drastic reduction of publication activity on the lake from the 1980 to an almost zero level in 1990. Some reasons could be deduced for this trend. First there was a change in the mandate of the Institute to cover all man-made lakes and major rivers in Nigeria. This mandate directed research efforts to other water bodies. Second, the non-coordination of research efforts and non-implementation of research results on the lake by policy makers must have discouraged scientists from carrying out further work on the lake. The fact that there is no management body and regulatory law for the lake, makes implementing research results difficult.

Publication Format

Table 1 shows that publication of journals is the highest preferred format followed closely by proceedings publications. Publication of annual reports was expected to be higher than 12.2% because of the years of establishments of the Institute. The reason for this low output in the format could be attributed to the mode by which the Institute was reporting its findings prior to 1981. By 1981, the style of reporting had become more informative and that attracted its coverage by *Aquatic Sciences Fisheries Abstracts* (the most popular alerting service in the field). Calculating from 1981, annual reports formed 53% of the total number of publications (1981–1991). When the result of Eng and Maclean (1988)¹⁶ is compared with the pre-

sent studies, higher productivity in scientific articles and proceedings is observed. This is an indication that scientists who work on the lake realize the significance of these media of communication in disseminating scientific information. However, other studies in the sciences have recorded a higher percentage of publication of journal articles, (Ibeun 1986¹⁸, 1987¹⁹). The percentage of journal articles here could be attributed to the problem of getting manuscripts accepted by journals. From personal discussion with some scientists who work on Lake Kainji, the rejection rate of manuscripts for journals is put at about 66.6%.

Subject Coverage

Table 2 shows the subject analysis of work done on Kainji Lake. The analysis shows more of basic research than applied research. Reading through some of the papers, one could see issues on fisheries management discussed. Eng and Maclean (1988)¹⁶ identified the problem of fisheries research as that of misconception of the term "applied research". According to them, this misconception has caused millions of dollars being channeled to conducting biological or adaptive research, much of which has been directed towards documentation of species occurrence, distribution, taxonomy, feeds and feedings, reproduction or general resources surveys instead of directing research toward problem solving.

Pattern of Authorship

Looking at the pattern of authorship in Table 3, single authorship is responsible for 76.12% and distantly followed by double authorship with 16.72%. This is an indication that scientists who worked on Lake Kainji preferred working alone which could be further interpreted as an individualistic approach to research on the lake. A cursory look at the current trend of authorship in publications generally shows a prevalence of joint authorship. The reason for this trend could be to bring the impact of many



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disciplines or opinions to bear on the subjects being researched upon. Another reason could also be to make research results more acceptable. The co-authorship in this study shows that co-authorship is among pure scientists such as fisheries biologists and aquaculturists; fisheries biologists and fisheries technologists. Only two papers from the data analysed could be said to have multi-disciplinary approach to the issues being investigated where the authors are of pure and social science backgrounds.

Distribution of Articles Among Journals

The significance of journals in disseminating scientific findings cannot be over emphasized. Therefore this study purposed to identify journal titles in which scientists who work on Lake Kainji prefer to publish their articles. The 100 articles were identified which were published in 33 journals. The core journals are *Hydrobiologia*, *Archives of Hydrobiology*, *Nigerian Field*, *African Journal of Tropical Hydrobiology & Fisheries and Fish Biology*. *The African Journal of Tropical Hydrobiology and Fisheries* is of interest. This journal has ceased publication since 1975 and is still ranked 4th on the list of core journals. The journal could probably have ranked first if it were still in circulation. In fact the first issue of the journal was in 1971

which means the journal lasted for only five years. Probable reason for this high patronage of the journal is the fact that the journal was based in East Africa and was purposely set up to feature articles on African Countries. The fact that the journal still forms part of the core journals shows that scientists working on the lake no longer publish their work in journals or that work has reduced drastically on the lake. Also, it could be one of the few journals available to them.

Coverage of Publications on Lake Kainji by Abstracting Services

There are many ways in which scientists' work can be internationally known. It can be by attendance at conferences or reciprocal sharing of manuscripts with colleagues living in other countries. Further still the work could be published in journals. The role played by abstracting services in making the work of scientists known in other countries is the best means of making research known. Abstracts provide direct access to the bibliographic data and cited references. They enable scientists to determine the actual content of a specific article and its relevance to their work. An abstracting journal has no geographical, religious or political boundary of circulation although it may be published in a given country. Thus it enjoys a wider circulation than any

other means. Each discipline has at least a reputable abstracting journal and for fisheries and aquatic science, it is *The Aquatic Sciences and Fisheries Abstracts*. Sixteen journal titles out of 33 were scanned for in the ASFIS database. All the core journals with the exception of *Nigerian Field* were scanned for articles. The annual report of Kainji Lake Research Institute was also scanned in the ASFIS database. Nine journals of Nigerian origin were not listed in the ASFIS database. This confirmed speculation that journal titles from developing countries are not adequately covered by internationally recognized abstracting journals. (Ibeun 1989b)¹⁹. Such abstracting journals will not have a comprehensive coverage of Nigerian Publications. Nigeria is currently not an active participant in the AGRIS programme. It is therefore a welcome development that the Library, Information and Documentation Unit of the National Institute for Freshwater Fisheries Research in New Bussa, Nigeria, embarked on the production of the *Nigerian Fisheries and Aquatic Sciences Abstracts* which is in its 4th issue. The abstract is an annual publication of documents acquired and stored into a special collection known as Nigerian Fisheries and Aquatic Sciences. The abstract furnishes scientists, policy-makers, students and fish farmers with the information stored in the special collection. It is distributed by the institute and the library provides document delivery photocopying services at a cost.

Recommendation

1. For better coverage of journals from developing countries by international abstracting services, publishers of such journals should at their own expense send a complimentary copy to the most reputable abstracting journal in the discipline. This explains why the Annual Report of the National Institute for Freshwater Fisheries Research is covered in ASFIS database.

2. For more comprehensive coverage of journal titles from developing countries, it is recommended that

developing countries increase their participation in the AGRIS System.

3. This study has identified the importance of *African Journal of Tropical Hydrobiology and Fisheries* which has ceased publication since 1975. It is therefore recommended that efforts should be made to reactivate the publication of the journal.

4. The study observed the predominance of single authorship (forming 76.12%). It is therefore recommended that research projects on the lake should have a multi-disciplinary approach.

5. There is a need to bridge the communication gap between the key players on the lake (fishermen, scientists and policy-makers). It is recommended that "Fisher Forum" be organized, which could be a quarterly meeting of the three groups where common interest could be discussed. The librarian/information scientists could play a prominent role in the organization of such meetings through coordinated networks to encourage resource sharing. They could also repackage fisheries information for easier accessibility to scientists and policy makers.

Conclusion

The obvious conclusion from this study is that there is a decline in the number of published works on Lake Kainji. It could also suggest a drastic reduction in the tempo of research activities. From reprint requests from the Library of this Institute, there is an indication that work is still going on in other man-made lakes in Africa. It is imperative that research activities should resume on the lake so that a wide gap in information will not be further created.

For international visibility, scientists who work on the lake should endeavour to increase their journal publication. This medium lends itself more readily to coverage in international alerting services than other media. Research projects on the lake should have a multi-disciplinary approach so as to accommodate researchers from different disciplines. Such co-ordinated researches make results and repackaging more acceptable.

The study has ascertained that five

journals form core titles in which scientists who work on the lake like to publish their articles. The *African Journal of Tropical Hydrobiology and Fisheries* which has ceased publication since 1975 falls within the core journals. This has some far reaching implications. First it suggests that there is lack of publication media for African scientists to publish their work. Therefore the journal needs to be reactivated. International abstracting services need to give a wider coverage to journals from developing countries.

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The Nature of Agricultural Information Needs of Small Scale Farmers in Africa: The Nigerian Example

Vincent Nnamdi Ozowa

Keywords: farmers; rural extension; Nigeria; information dissemination

ABSTRACT: Agricultural development, though receiving support from aid donors and government, has not been successful in Nigeria. Emphasis has been on big-scale transformation agricultural approach and not enough attention has been paid to information dissemination which is an essential ingredient in agricultural development programmes. There is a new approach to agriculture with more emphasis on small-scale farming and farmers. If the new approach is to work, new approaches should be taken to information dissemination and management that grows out of a clear understanding of what the farmers information needs are. The nature of small-scale farming and information needs are identified and an assessment is made of how agricultural information is presently disseminated. The channels for diffusing such information are mentioned and the problems encountered and strengths are discussed. Improvement to the present system are suggested one of which is the use of traditional media.

RESUMÉ: Le développement agricole, malgré le soutien des donateurs et des gouvernements, n'a pas été couronné de succès au Nigéria. Un accent particulier a été mis sur l'approche de la transformation agricole à grande échelle, et peu d'attention a été octroyée à la diffusion de l'information qui est un élément clé dans les programmes de développement agricole. Il existe une nouvelle approche en agriculture qui met plus l'accent sur les agriculteurs et les petites exploitations agricoles. Si cette nouvelle approche est satisfaisante, d'autres devraient être prises dans le domaine de la diffusion et de la gestion de l'information, en se basant sur une meilleure compréhension des besoins en information au niveau des agri-

culteurs. La nature de la petite exploitation agricole ainsi que les besoins en information sont identifiés, et une étude est faite sur le processus actuel de la diffusion de l'information agricole. Les canaux de diffusion de cette information sont mentionnés, et leurs contraintes et points forts analysés. Des suggestions sont faites pour améliorer le système actuel, entre autres l'utilisation de média traditionnel.

RESUMEN: Las contribuciones de las agencias de ayuda y el gobierno no han tenido impacto en el desarrollo agrícola de Nigeria. Se ha enfatizado el enfoque de transformación agrícola en gran escala, y no se ha prestado suficiente atención a la difusión de la información, que es un ingrediente esencial de los programas de desarrollo agrícola. Existe un nuevo enfoque en la agricultura, en que se da mayor énfasis a la agricultura en pequeña escala y a los pequeños agricultores. Si este nuevo enfoque ha de funcionar, se deben aplicar un nuevo enfoque en la difusión y el manejo de la información. Este enfoque debe surgir de una comprensión clara de las necesidades de información de los agricultores. Este trabajo identifica la naturaleza de la agricultura en pequeña escala al igual que las necesidades de información de los pequeños agricultores. Se determina también qué cantidad de información agrícola se difunde actualmente. Se indican los canales de difusión de esa información, y se discuten los problemas y las ventajas encontradas. Se recomienda mejorar el sistema actual, en particular el uso de medios tradicionales.

ZUSAMMENFASSUNG: Die landwirtschaftliche Entwicklung in Nigeria war trotz Unterstützung von Seiten der Entwicklungshilfe und der Regierung erfolglos. Das Schwergewicht lag auf dem Versuch, die Landwirtschaft in großem Rahmen umzugestalten, wobei der Informationsverbreitung, die ein wesentlicher Bestandteil in landwirtschaftlichen Ent-

wicklungsprogrammen ist, nicht genügend Aufmerksamkeit geschenkt wurde. Gegenwärtig werden in der Landwirtschaft neue Wege gegangen, indem man versucht, das Schwergewicht auf kleine landwirtschaftliche Betriebe zu legen. Wenn der neue Versuch funktionieren soll, müßten neue Wege in der Informationsverbreitung und Informationsverwaltung gegangen werden, die ihren Ursprung in einer klaren Vorstellung von dem haben, was die Bauern an Informationen benötigen. Die Art der kleinen landwirtschaftlichen Betriebe und ihre Informationsbedürfnisse werden dargestellt und eine Schätzung unternommen, in welcher Weise landwirtschaftliche Informationen gegenwärtig verteilt werden. Die Kanäle zur Verbreitung solcher Informationen werden genannt und die auftauchenden Probleme und Stärken diskutiert. Verbesserungen am gegenwärtigen System werden vorgeschlagen, u.a. die Nutzung traditioneller Medien.

"We know how to harness the creative and inventive forces of science and technology, but I submit that we still have not been fully successful in technology diffusion."¹

Over the years, deliberate, though ineffective efforts have been made by donors and African countries to bring about agricultural development without much to show for it. Much of the failure can be attributed to the adapted transformation approach to agriculture which is characterized by the introduction of a wide variety of large scale farming and processing technologies. It is however gratifying to note that there is now a shift in emphasis from the big scale transformation approach to the small scale improvement strategy approach which

is attuned to African age long farm practice.

The failure can also be attributed to the treatment of information delivery as a matter of course by most African governments. As often happens, agricultural information is not integrated with other development programmes to address the numerous related problems that face farmers. Information is an essential ingredient in agricultural development programmes but Nigerian farmers seldom feel the impact of agricultural innovations either because they have no access to such vital information or because it is poorly disseminated. Like Aboyade² points out, the information provided is exclusively focused on policy makers, researchers, and those who manage policy decisions with scant attention paid to the information needs of the targeted beneficiaries of the policy decisions. Aina³ cannot but conclude that the non-provision of agricultural information is a key factor that has greatly limited agricultural development in developing countries.

If the approaches to agricultural development programmes are to work, African governments need to take new approaches to information dissemination and management that grow out from a clear understanding of what farmers information needs are.

This paper is devoted to the identification of the nature of small scale farming, the exploration of small scale farmers information needs and assessing possible approaches to satisfying them.

Small Scale Farming

Nigerian farms are classified by Olayide⁴ into small scale, medium scale and large scale. When judged by international standards whereby all farms less than 10.00 hectares are classed as small, then 94.37 per cent of all farm holdings in Nigeria in 1973/74 (or a total of 28.130 million holdings must be classified as small scale farms while the remaining 5.63 per cent of all holdings (or 1.678

million holdings) must be classified as medium scale.

A small scale farmer therefore is one whose unit of farm holdings is limited to 0.10 hectare—10 hectares. His uniqueness is his efficiency in the utilization of basic production resources available to him. He makes a significant and important contribution to national product—99 per cent of all output of most crops grown in Nigeria. The small-scale farmer is the main producer of 98 per cent of the food consumed in Nigeria with the only exception of wheat.⁵

Notwithstanding his relatively fragile resource base, Reynolds⁶ in the studies carried out on the main differences between small scale and large scale farming system observes:

Research from countries as diverse as Columbia and India indicates that the small scale farms apply more labour and other variable inputs per acre of land and achieve higher yields per acre. Large farms are less labour intensive and achieve lower yields per acre but higher yields per man hour.

Experience has shown that small scale farms outyield large farms on calorie output per hectare and are therefore more efficient. Even though small scale farmers accessibility to agricultural innovations are often limited by unfavourable economic, socio-cultural and institutional conditions, they have succeeded to a large extent in harnessing their indigenous knowledge to achieve some level of efficiency. It has however not been possible for them to achieve optimum production because they have not been able to efficiently husband the full potentials of land, capital, water and management resources. If provided with the right inputs, feasible technology and relevant information, they are capable of playing a vital role in transforming traditional agriculture.

Information Needs of Small Scale Farmers

No one can categorically claim to know all the information needs of

farmers especially in an information dependent sector like agriculture where there are new and rather complex problems facing farmers every day. Studies carried out by Gregorio and Sison⁷ indicate that it is dangerous to make such a claim especially as there are as many differences in agricultural information needs within a country as between countries.

It is safe to assert however that the information needs of Nigerian small scale farmers revolve around the resolution of such farm problems as pest hazards, weed control, water-moisture insufficiency, soil fertility, farm credit, labour shortage, soil erosion and so forth. Most of these information needs influence the upkeep of farm animals and crops. The information needs may be grouped into five headings: agricultural inputs; extension education; agricultural technology; agricultural credit; marketing.

Modern farm inputs are needed to raise the low level of productive efficiency on small farms in Nigeria. These inputs may include fertilizers, improved variety of seeds and seedlings, feeds, plant protection chemicals, agricultural machinery and equipment and water.

The small scale farmer who, for example, decides to cultivate hybrid maize, will require some necessary information if he hopes to make a success of the venture. They include sources of input, variety of maize, suitable soil and weather condition for planting, choice of fertilizer for proper plant growth and yield, source of fertilizer, method of application, plant spacing, choice of herbicide, ways of dealing with possible plant diseases that affect maize, when to harvest, and so forth. The list is by no means exhaustive.

An examination of the factors influencing the adoption and continued use of these inputs will show that information dissemination is a very important factor. It is a factor that requires more attention than it now gets.

Extension Education

The general lack of awareness among Nigerian small scale farmers can be attributed to their high level of illiteracy. This contributes to the low level of adoption of agricultural production technology. For farmers to diffuse information on agricultural production technology, they need extension education. Williams⁸ defines extension (education) as a service which assists the farmers through educational procedures in improving their farming methods and techniques, increasing their production efficiency and income and improving their levels of living. Education like Obinne⁹ points out is crucial in understanding the value and use of innovations. Abd-Ella and Holberg¹⁰, and Osuji¹¹, and Akinola¹² in their studies, found that education can and does create the awareness and need for seeking more useful sources of information on relevant improved technologies and for increasing farm size. Farland and Parkinson¹³ succinctly enumerate the benefits of education to small scale farmers in these words:

Education is needed to provide such benefits as accumulation of knowledge, the application of knowledge, the ability to calculate, the opportunity to place sellers and buyers on an equal footing,...and the ability to participate in institutions conducive to improved farming practices (such as cooperatives) and use of extension services...

This type of education is better described as functional rather than formal. It is better provided by extension workers whose main task is to convey information in a meaningful form to farmers. One of the ways they do this is by training a group of model farmers with the hope that such farmers come in contact with other farmers. This "trickle down effect" is particularly recommended because the number of farmers far outnumber available extension workers with the present ratio of 1:5000.¹⁴ Small scale farmers extension education information needs

should be such that can widen their horizon and make it possible for them to apply such knowledge in their farm practices.

Agricultural Technology

Olayide¹⁵ defines agricultural technology as the application of technology for the promotion and development of agriculture. Agricultural technology for the small scale farmer he says, must grapple with the minimization of the drudgery or irksomeness of farm chores. In this context, agricultural technology should be labour-saving, labour-enhancing and labour-enlarging at the minimum possible expenditure of energy.

The agricultural technology information needs of the small scale farmer ranges from the type of appropriate technology to adopt for a given farm chore, to the use of such appropriate technology. The farmer needs information on production technology that involves cultivating, fertilizing, pest control, weeding and harvesting. This sort of information is at the moment being diffused by extension workers, other farmers, government parastatals and agricultural equipment dealers. The impact is yet to be felt.

Agricultural Credit

Agricultural credit as defined by Abe¹⁶ encompasses all loans and advances granted borrowers to finance and service production activities relating to agriculture, fisheries and forestry and also for the processing, marketing, storage and distribution of products resulting from these activities.

Small scale farmers are one of the beneficiaries of agricultural credit in Nigeria but because of their low level of literacy they are unaware of existing loan facilities. To reap the benefit of agricultural credit, small scale farmers need information relating to sources of loan such as names of lenders, location and types of existing credit sources. The farmers need information on the terms of

loans such as the interest rates. They need to know the loanable amount and mode of repayment.

Information regarding agricultural credit gets to small scale farmers through channels like relations, friends, neighbours, government officials, commercial and agricultural credit banks. To ensure that the information is properly disseminated, grassroot organs like village heads and local government officials are used to diffuse such information because of their personal touch with small scale farmers. Extension agents need to intensify their efforts in educating farmers to increase their level of awareness.

Marketing

All business activities involved in the movement of commodities from production to consumption is marketing. The farmer's market information needs are those that enable him make rational and relevant decisions. This type of information is provided by market information services.

According to Schubert¹⁷, market information services have the function of collecting and processing market data systematically and continuously, and of making it available to market participants in a form relevant to their decision making. The nature of market information needs of small scale farmers include:

- Information on product planning. This is information on what crop and variety to grow at a given season with marketability of such a crop as an important deciding factor.
- Information on current prices.
- Information on forecast of market trends. This type of information assists farmers in planning their market products.
- Information on sales timing. This assists farmers in ensuring that they do not cause a market glut. It enables them to stagger harvesting and quantity for marketing.
- Information on improved marketing practices. It includes information on improved harvesting methods. This information is disseminated

by field level extension workers by demonstration at farmer's field, local and wholesale markets.

- Information on group marketing. This enables small scale farmers to have organised sales of marketable surplus and bulk transport of produce.

For agricultural market information to be useful to small scale farmers, such information must be relevant, meaningful, reliable and promptly available. In Nigeria, agricultural market information to small scale farmers is provided by the Ministry of Agriculture through the field level extension workers and by the broadcasting media. A lot still has to be done in this area. Some of those fostered with market information function in Nigeria are still far from performing the functions as enumerated by Schubert because most of them are not trained for the job.

Agricultural Information Dissemination

Within the past two decades there has been a burst of research activities in the area of agriculture in Nigerian universities and agricultural research centres located around the country. Farreaching agricultural innovations that are capable of boosting the small scale farmer's agricultural production and Nigeria's economic development have been discovered. The yam miniset technique, protein rich soyabean production and utilization techniques, production and use of animal vaccines and drugs and labour saving devices are some of the many improved agricultural innovations not properly diffused. Prominent among the agricultural centres are the International Institute for Tropical Agriculture (IITA), the National Root Crops Research Institute, the National Veterinary Research Institute and the three universities of agriculture.

Unfortunately most of these innovations do not reach the farmers field. Like Wharton¹⁸ rightly observes in the quote at the beginning of this paper, we have not been fully

successful in technology diffusion. This is because the medium for information dissemination in use are not quite effective.

Present Situation

Deliberate institutional and governmental organs have been put in place to ensure that farmers get to know and adopt agricultural innovations relevant to their situations. Notable among such organs are the Agricultural Extension and Research Liaison Services (AERLS), the extension services of the Agricultural Development Project (ADPs), Ministries of Agriculture at both state and federal levels, Media Forum for Agriculture, Cooperative Extension Centres (CEC) of universities and public enlightenment units of the 18 agricultural research centres. These bodies serve as facilitators of agricultural messages by acting as communication departments.

They use channels like leaflets, newsletters, posters, exhibits, visual aids and radio programmes in communicating agricultural information. Radio and television programmes are popular although the broadcasting media is controlled by government with its attendant problems especially the choice of programmes to be presented.

Of all the existing channels of agricultural communication, Nigerian farmers rank extension highest in terms of providing credible information and advice. Extension makes a significant contribution to the process of adopting and diffusing agricultural technology. A major function of extension according to Ojo¹⁹ is to get the farmer into a frame of mind and attitude conducive to acceptance of technological change. To do this effectively, extension workers establish communication with the farmers that makes it possible for farmers to utilize such information or skill to improve their agricultural and rural life. The use of fertilizers for example, is fairly widespread in the middlebelt region of Nigeria where information about fertilizers are well

diffused. Even though the demand for fertilizers is buoyant, the supply is most inadequate to meet the demands. Apart from the use of extension for diffusion of agricultural innovation, other channels like rural development field staff, contact farmers, school teachers, private sector agri-business people, staff of the Ministry of Agriculture and the electronic and print media are used. These channels have their strengths and weaknesses.

To strengthen the efforts of the print and broadcasting media in ensuring proper agricultural information dissemination to farmers, the Media Forum for Agriculture for example, was formed. According to Adeniji-Soji²⁰, the Forum was formed by media practitioners from all over Nigeria in 1989 with the aim of providing effective support for agriculture by improving the quality of coverage of agriculture in the media to make greater impact on agricultural dissemination. The objective is to set up an infrastructure to provide the necessary impetus for the exchange and dissemination of news and news materials on farming and related activities.

Again the targeted audience is not properly reached as the main beneficiaries of information carried by the print and broadcasting media are urban elites.

Problems of Agricultural Information Dissemination

There are some limiting factors and apparent constraints in agricultural information dissemination in Nigeria. The limiting factors are discussed by Awa²¹ in his study and they include: status differences between extension agents and their clients; agents' inadequate knowledge of the communication process, that is, "how communication works"; lack of interagency cooperation both in programme planning and in implementation; and extension's general lack of interest in traditional media.

One of the obvious constraints

include the use of the broadcasting media. The broadcasting media in Nigeria is limited in terms of poor reception quality and the area covered. It is often targeted on the urban dwellers. The messages carried are not tailored to the information needs of rural populations. Even when the information is relevant, it is seldom aired at the proper time and so does not get to the targeted audience. Carey²² observes that "Mass audience channels are well suited to certain functions...but these mass channels have severe limitations when dealing with complex issues, or at the persuasion stage of the diffusion process." This is true especially in agricultural communication.

Another major constraint is the use of the print media. The print media which includes leaflets and newsletters as message carriers are of limited use in reaching illiterate farmers. Technical languages used in communicating information are incomprehensible to the farmers. Gefu²³ laments that "very often, the knowledge base of communities is not taken into consideration in the planning, implementation and evaluation of development-oriented programmes in developing economies."

One major constraint to agricultural information dissemination is the inadequacy of existing extension programmes. Some of these programmes are conceived without well thought out plans and are prepared in a hurry without the farmers whose attitude are to be changed making any input. Agricultural information packages prepared under this condition can neither sustain the farmers' interest nor effect the desired attitudinal change. Farmers interest are reduced even more as most of the agricultural innovations are written and broadcast in English language instead of the local language. When the local language is even used, emphasis is often on the three major Nigerian languages—Hausa, Ibo and Yoruba. These programmes are broadcast when farmers are far away in the fields or too tired to listen after the



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day's toil. A majority of the farmers do not own radio sets.

Well intentioned agricultural programmes can be marred by poor implementation and too much bureaucracy. For example, at the Co-operative Extension Centre of the University of Agriculture, Makurdi, where a competent corps of subject specialists is located but there is not adequate funding, facilities and logistic support like visual aids, equipment, transportation and inadequate communication channels. As a result, the Centre has not been able to make the expected impact on the immediate university community.

The present ratio of 1 extension worker to 5,000 farmers is inadequate for effective agricultural information diffusion. The problem is compounded by the paucity of women in extension especially in a society where cultural and religious taboos make it impossible for male extension workers to reach women farmers who outnumber male small scale farmers.

Many people in extension are ill-prepared for extension and an extension communication job. The emphasis in their training is more on technical proficiency rather than on rhetorical and persuasive skills. An extensionist trained in this way, is unlikely to make an impact on a conservative farmer who is not likely to put his farm inputs to risk by trying the extensionists improved technique.

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Library and Information Science Education and Training for Information Provision to Rural Communities in South Africa

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Keywords: rural areas; community information services; library education; South Africa

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ABSTRACT: A survey was conducted to review the existing Library and Information Science (LIS) education and training in South Africa. The various programmes and levels offered by eleven universities and five technikons which currently offer LIS programmes are identified. The paper looks at the LIS education and training for information provision to rural communities. It assesses the viability and opinions of LIS departments towards offering specialization courses in information provision to rural communities. Based on the survey, the paper concludes that there is a need to offer specialized training to people who will work with various rural communities. This can be achieved through workshops, continuing education programmes, option courses or parts of the core general LIS course at the basic professional level programmes, B.Bibl and Post Graduate Diploma.

RESUMÉ: Une enquête a été menée pour passer en revue la formation et l'éducation en Science de l'Information en Afrique du Sud. Les différents programmes et niveaux offerts par onze universités et cinq technikons qui offrent actuellement des programmes en science de l'information, sont identifiés. Cet article étudie principalement la fourniture de l'information vers les communautés rurales. Il analyse les opinions des instituts de science de l'information à propos de cours spécialisés sur la fourniture de l'information vers les communautés rurales, et la viabilité de ces

cours. En se basant sur cette étude, cet article conclut qu'il y a un manque de formation spécialisée pour les personnes travaillant dans les différentes communautés rurales. Ce manque pourrait être comblé par la création d'ateliers ou de programmes de formation continue, de cours ou modules optionnels intégrés dans la formation en science de l'information au niveau des programmes de formation professionnelle ou universitaire.

RESUMEN: Se realizó un estudio para revisar la educación y la capacitación en Bibliotecología y Ciencias de la Información (BCI) en Sudáfrica. Se identifican los diferentes programas y grados ofrecidos por 11 universidades y cinco escuelas técnicas que actualmente ofrecen programas en BCI. El trabajo revisa el papel de la educación y la capacitación en BCI en el suministro de información a las comunidades rurales; evalúa la viabilidad de ofrecer cursos de especialización en el esta área, y recopila las opiniones de los departamentos de BCI al respecto. Con base en los resultados del estudio, se concluye que es necesario ofrecer una capacitación especializada a aquellas personas que trabajan con diferentes comunidades rurales. Esta capacitación se puede lograr mediante talleres, programas de educación continuada, cursos opcionales, o partes del curso básico general de BCI, a nivel básico profesional y a nivel de posgrado.

ZUSAMMENFASSUNG: Eine Untersuchung wurde durchgeführt, um die vorhandene Ausbildung in Bibliotheks- und Informationswissenschaften (LIS) in Südafrika zu überprüfen. Die gegenwärtig von elf Universitäten und fünf Technika angebotenen unterschiedlichen LIS-Programme und Ausbildungsgänge werden besprochen. Insbesondere behandelt die Arbeit die LIS-Ausbildung in der Informationsversorgung des ländlichen Raumes. Sie bewertet die Entwicklungsfähigkeit und die Ansichten der LIS-Fachbereiche

zur Frage eines Angebotes von Spezialisierungskursen zum Thema Informationsversorgung des ländlichen Raums. Auf der Grundlage der Untersuchung kommt die Arbeit zu dem Schluß, daß es einen Bedarf an einer Spezialausbildung für Fachkräfte gibt, die mit den verschiedenen ländlichen Gemeinden arbeiten werden. Diese Spezialausbildung ist möglich durch Seminare, Weiterbildungsprogramme, fakultative Kurse oder innerhalb der allgemeinen LIS-Pflichtkurse sowohl auf der Ebene der einzelnen Grundausbildungsprogramme als auch auf der Ebene des B.Bibl oder Post Graduate Diploma.

In South Africa, like the rest of the Library and Information Science (LIS) world, there has not only been a recognition of the various specializations in LIS but also the debate on whether to offer such specializations or not continues at various fora. In 1992, van Brakel reported that some university LIS departments offered specializations while others planned to offer some in the future. The universities of the North, University of Zululand and Orange Free State offered some of the following specializations: Information for Industry/Business Decision Making etc; Information Services for Agriculture; Library Services for Children; and Public Libraries. Also offered were: Children's Literature; Law Librarianship; Archival Work; Music; and Non-book or Audio-Visual Librarian. The Universities of the Western Cape and Zululand indicated that they were planning to offer some of the specializations listed above which

they did not offer at the time of the survey.¹

One of the areas of concern in South African LIS Sector, particularly in recent years, has been the plight of rural communities, their information needs and information provision. Concern has been expressed in various literatures and professional fora over the lack of baseline data about, and inadequacies, in information provision to rural communities. The *NEPI Report-LIS*² briefly highlighted the general plight of information provision to rural communities in South Africa. The TRANSLIS Coalition which originated during the final stages of NEPI-LIS Research Groups' work has highlighted as one of its basic objectives the redressing of imbalances caused as a result of the apartheid system in sectors like rural communities. The provision of information to rural communities has been identified by the various Regional TRANSLIS Coalitions as one of the key sectors requiring immediate attention through research in order to establish adequately the extent of the problem.³

As a result of a review of the above discussions and from the various LIS fora a number of questions which are of interest to LIS education and training for the provision of information to rural communities in South Africa therefore arise. The questions also tie-in well with the sub-theme of the seminar. For example, does the recognition of inadequacies in information provision to rural communities warrant offering specialization in education and training programmes? How are LIS education and training programmes in South Africa currently addressing the issue of provision of information to rural communities? Is there any need to deal with information provision to rural communities in LIS education and training and if so how will departments deal with it?

While there have been some discussions on LIS education and training in South Africa by most recently, The Committee of University Princi-

pals, (CUP)⁴ Horton,⁵ van Brakel,⁶ and Nassimbeni, Stilwell and Walker⁷ none of these specifically addressed the issue of education and training for information provision to rural communities. Van Brakel for example, within the limits of the objectives his survey adequately addressed in general terms, the "current and future directions of specialization", but not specifically that of information provision to rural communities. Nassimbeni, Stilwell and Walker highlighted the general "lack of differentiation and specialization in LIS education and training". They gave examples of attempts by some departments to cope with this problem. Like van Brakel their treatment was deliberately general and not specifically on LIS education and training for information provision to rural communities.

The Purpose of the Survey and Method of Data Collection

Because of lack of adequate published information and in order to adequately answer some of the questions about the current state and future prospects of LIS education and training for information provision to rural communities in South Africa a survey was conducted. A questionnaire was distributed in March 1994 to Heads of thirteen University and five Technikon Departments which offer LIS programmes in South Africa. The Departments were requested, if they found it convenient, to forward to the author any other additional documents and information which they perceived to be useful to the survey. Some of the Departments were kind enough to send these.

The universities included: Potchefstroom University for Christian Higher Education (PUCH); Rand Afrikaans University (RAU); University of Cape Town (UCT); University of Fort Hare (UFH); University of South Africa (UNISA); University of Transkei (UNITRA) and University of Natal, Pietermaritzburg (UNP). Others included: Uni-

versities of the North (UN); University of the Orange Free State (UOFS); University of Pretoria (UP); University of Stellenbosch (US); the University of Western Cape (UWC) and University of Zululand (UZ).

The technikons were: Cape Technikon; Port Elizabeth Technikon; M.L. Sultan Technikon; Technikon Pretoria and Technikon RSA. A full list of Technikons and University LIS Departments, and their addresses is given in Appendix 1. Of the thirteen University Departments included in the survey, two did not respond. All five technikons responded to the questionnaire.

The questionnaire solicited general information on the programmes and levels offered by each department. Other data solicited were the current and planned future treatment in the curricula of information provision to rural communities; and lists of any work in terms of published and unpublished papers on rural communities information needs and provision done by both students and staff of these departments.

LIS Departments, Programmes and Levels Offered

Although not significant to the study, it can be noted from the names of the Departments in Appendix 1, that a variety of names (as one would expect at the tertiary level) are used for LIS Departments at both the Technikons and Universities. The names of Departments at universities have not changed much since van Brakel's survey in 1992.⁸

Technikons, as shown in Table 1 (A), offer three major programmes, namely, the Certificate; National Diploma; and National Higher Diploma in Library and Information Practice. On the other hand a variety of LIS programmes at various levels are offered by University Departments as summarised in Table 1 (B). These range from a Lower Diploma (non-degree qualification) to the Doctoral programme in Library and Information Science.

It is interesting to note that despite the 1989 Committee of University Principals' (CUP) recommendation for some Departments to discontinue some programmes and in effect reduce the number of LIS programmes offered in the country,⁹ the number of programmes offered have since increased. One should hasten to point out however, that the CUP made it clear that its recommendations were simply recommendations, "...individual universities' autonomy was fully respected and the decision on closing or scaling down of any academic activity...fully rested with respective Senates and Councils".¹⁰ One would therefore assume that the development of new LIS programmes have been deemed by each institution to be viable, otherwise it would be necessary for the departments themselves to review the cost-effectiveness of offering them.

At present much of the curricula and structures of various programmes, including LIS at Technikons is governed by the South African Society for Co-operative Education (SASCE). The current structure and curriculum of the National Diploma in Library and Information Practice offered by all the five Technikons is cooperatively agreed upon and in effect prescribed by National Education Department.

This however, does not seem to negate the fact that LIS educators at Technikons, the general LIS profession and indeed potential employers of Technikon-qualified library and information workers can, if a need is identified, encourage a technikon to offer a given specialization course or programme. Although not explicitly mentioned this possibility is provided for by the principle of the system of cooperative education which "...relies on contributions made by the potential employers and the educational institutions, towards the training of students for specific careers". Furthermore, a basic aim for Technikon programmes including that of LIS is to provide for middle level manpower for "...specific industry or occupation segment...[within a

Table 1 - LIS Programmes and Levels Offered by Departments

(A) Technikons

Institution	Cert. in LIS Practice	National Dip. in LIS Practice	National Higher Dip. in LIS Practice
Cape Tech	X	X	X
P.E. Tech		X	X
M.L. Sultan		X	
Tech. Pretoria		X	X
Tech. RSA		X	
Totals	1	5	3

(B) Universities

INSTN	LOWER Dip.	SPEC. SCHOOL	BA. IS/B. Bibl (Ed)	B. Bibl	PG Dip	B. Bibl (Hons)	Masters Course work	Masters Research	Doctoral
PUCHE		X (HED)	X	X	X			X	X
RAU				X		X	X	X	X
UCT					X	X	X	X	X
UFH				X		X		X	
UNISA		X (DSE)		X		X		X	X
UNITRA	X			X	X	X		X	
UNP		X (DSE)			X	X	X	X	X
UP				X		X		X	X
US				X		X		X	X
UWC	X	X (DSL)	X	X	X	X		X	X
UZ		X (DSL)		X		X		X	
Total	2	5	2	9	5	10	3	11	8

given locality or nationally]"¹¹ It was in fact on this basis and in attempt to gather data on future directions that Technikons were asked to complete the same questionnaire as Universities.

The general entrance qualifications for the National Diploma is a senior certificate or its equivalent, plus a successful completion of an English language comprehension and aptitude tests. The duration of the programme is three years full-time study of which a six-month library practicum, spread over the second and third years of study is required.

The trend in the structure of LIS education and training in South Africa has been for university departments to offer an undergraduate degree or post-graduate diploma as the basic professional programmes.¹² Of the eleven university LIS Departments,

nine do offer a Bachelor's undergraduate programme, while two, University of Cape Town and University of Natal Pietermaritzburg do not offer an undergraduate programme. In addition to the B.Bibl. the universities of Potchefstroom and the Western Cape offer B.A. with a major in Information Science and B.Bibl. (Education), respectively.

Six Departments offer a Post-graduate Diploma programme which presumably provides persons with any undergraduate degree an opportunity to pursue LIS education and training. These LIS Departments are those at the universities of Zululand, Transkei, Natal, Potchefstroom, Pretoria and the Western Cape. However, it is interesting to note that four Departments which offer an undergraduate degree also offer a post-graduate diploma. These are the

Universities of Potchefstroom, Transkei, the Western Cape and Zululand. It was not the aim of this survey to assess in detail the general structure of the programmes, but it would be of further interest in the future to find out how these departments treat the teaching of the two "professional" level programmes.

All the eleven university departments which responded to the questionnaire, except the one at Potchefstroom University, offer an Honours programme. This programme is mostly intended for persons who have basic LIS qualifications such as the B.Bibl. and Post Graduate diploma. The only Departments which offer the non-degree Lower Diploma in LIS are those of the Universities of Transkei and the Western Cape.

Five Departments at University of Western Cape, University of South Africa, University of Natal Pietermaritzburg, University of Zululand and Potchefstroom University for Christian Higher Education offer stand-alone specialization programmes in School Librarianship. These include the Diploma in Librarianship (UWC and UZ), Diploma in Special Education (DSE) at UNP and UNISA, and Higher Education Diploma-Post Graduate at the Potchefstroom. As can be noted from the nomenclatures of the programmes some Departments offer these specializations as non-degree diplomas and others offer them as post graduate programmes.

Other post graduate programmes offered by some Departments are the masters and Doctoral programmes. There are two types of Masters currently offered by Departments. These are Masters by Course Work, and Masters by Research, Cape Town, Natal and Rand Afrikaans, are the only three universities which currently offer the Masters programme by course-work. All eleven university LIS Departments offer the Masters programme by research. Of the eleven departments which responded to the questionnaire, eight offer doctoral programmes while three do not. The three departments which do not offer the doctoral programme are

UNITRA, Universities of the North and Fort Hare.

Treatment of "Information Provision to Rural Communities"

To establish the current treatment of information provision to rural communities, Departments were asked a number of questions. First, they were asked to indicate whether or not they currently offer specialized courses or modules as part of any of the programmes identified in Tables 1 (A) and (B). Departments which indicated that they offer such courses, were also requested to list the names of such courses or modules.

As can be noted from Tables 1 (A) and (B) none of the departments offer a specialized stand-alone programme in information provision to rural communities. Only two Universities, Pretoria and the Western Cape offer specialized courses as part of general LIS Programmes, which are related to information provision to rural communities. The University of Pretoria offers such courses at two levels. At the undergraduate level Lib. Sc. 400 covers *Information and Development; Rural Information Services and Community Information Services*. At the post graduate level, an Honours course, *Information People and Development* is offered. The University of the Western Cape offers *Information Science 312 (II)-Information Services* which is heavily slanted to rural information service.

Currently none of the Technikons offer any specialized course in information provision to rural communities. It is important to point out that at this stage no Department was asked to give reasons for not offering such a specialization. This was treated later in the question relating to continuing education and it is reported in the later part of this paper. However, one respondent from a Technikon took the liberty to make a comment about specializations. The comment highlights one of the arguments alluded to above. She stated that:

The Technikon teaching programmes concentrate on developing skills, knowledge and attitudes of students in a holistic manner. Problem-solving skills in which the solution may require the use of high or low technology help develop coping skills. Hence the contexts in which the practice may take place are explored and thus "Rural Librarianship" is not addressed as a separate entity. Rural Librarianship as a context and the special coping skills needed are addressed across the curriculum. For example, in User Services, classifications (ways and means which are meaningful to the user population etc.)

Second, Departments, including the two which offer courses on information provision to rural communities, were asked if they offer other general LIS courses in which some aspects of information provision to rural communities are taught. In a follow-up question they were also asked to list and give short descriptions of such courses.

Four Technikons indicated that they do not offer any such course. Although one Technikon indicated that the course(s) it offered treated some aspects of rural information, no course(s) in answer to the follow-up question was or were listed. This happened to be the same Technikon from which the above quoted was received. Therefore, one would assume a general treatment.

An interesting "side comment" made by another Technikon LIS department was that the "rural communities" concept was simply a political buzz-word, particularly in South Africa where it currently appears to be used more in an attempt to be "politically correct" and woo support. The respondent felt that the more appropriate concept should be "small communities".

This comment indicates the need to precisely define, identify and isolate special user groups, information materials or library and information systems whose "special" characteristics form the basis upon which the course content of a given specialization is based. If it is difficult to

identify and professionally agree on the limits of a given "special" group such as rural communities, then it would be difficult to develop a special curriculum for use in teaching prospective LIS workers to deal with this group. However, guidance and help in defining specific groups such as "rural communities" which in fact is generally agreed upon in several field of study, should be provided by the outcome of debates at seminars such as this one.

Of all the eleven University Departments only two indicated that they do not offer any general courses in which information provision to rural communities is treated. An array of general courses in which this special information community is treated were given by the nine departments. These are listed below with abbreviations of the names of universities which indicated that they offer such treatment given in parentheses.

Information Science I: Characteristics and users of community information centres and public libraries; the use of information by all people in the community. (PUCHE)

Readership (Studies): Who are the rural readers?; needs and interest; needs of illiterates, newly literates, and general information users. (PUCHE); At Post graduate level, and inclusion of all this and treatment of indigenous and exotic information sources; repackaging of information for various users including rural communities; a guest lecture by a Provincial Library Service Librarian responsible for rural libraries; information needs assessment of various communities using a specialized data collecting instrument (UNP); Development of Community Profiles (UP); Also general readership (UWC).

Information Services/Retrieval: Answering information questions of rural, illiterate, and newly literate users (PUCHE). The role of Libraries and Information in Rural Communities (UP; UNP).

Information Sources: Alternative [as opposed to the standard, printed etc.] information sources (PUCHE).

School Librarianship: The use of

the School Library for community information services (PUCHE, UNP) Rural needs taken into account (UZ).

Management: Starting a new library and re-statement of new mission statement for old [existing] libraries. (PUCHE) At first year, Dip and B.Inf.: Identifies type of information centres and stresses the needs of rural information centres, especially at lower diploma who may often operate at that level (UNITRA).

Information for Development in S.A. Module and Information Needs/ services in rural area Module as part of one course (RAU).

Information Provision to Disadvantaged Communities: A self-study component offers an opportunity for rural communities (RAU) Directed study for Honours (UNP).

In various places of the various courses (UNISA, M.L. Sultan, M.L. Sultan Technicon PUCHE, UNP (as part of directed study).

Development Librarianship: At Honours level, defines (urban) and rural development, identifying approaches to services, drawing up a policy and lobbying for them (UNP).

Librarianship: As a component of comparative librarianship (UNP) Public, community and rural libraries (UZ).

Information Delivery Systems: Masters course-work, review various conventional and non-conventional systems (UNP).

Community Information Services: Five lectures are used for survival information relevant to rural communities (US).

Research Methods: At higher level, use studies; combined community and school libraries in rural settings; reading materials for developing communities (UZ).

The third question asked in an attempt to establish the current treatment of information provision to rural communities by LIS education and training in South Africa was one related to the use of the alternative structure of continuing education programmes and workshops. Like in the other cases of actual courses, or

parts of courses in which this specialization was treated, Departments were asked to list such courses and give short descriptions if they offered them. In cases where a Department indicated that it had not offered any workshops or continuing education programmes in this area, the reason(s) for not doing so was/were solicited.

Six Departments indicated that they offered or had in the recent past offered or jointly participated in offering workshops and continuing education programmes directly relevant to the provision of information to rural communities. While five Departments stated that they had not offered any workshops or continuing education programmes.

Various reasons were given by Departments who had not or were not currently offering workshops or continuing education programmes. The most recurring reason by the five departments which do not or have not offered workshop(s) in this area was that of lack of staff or staff constraint. One Department pointed out that its curriculum was full...while another gave a similar additional reason that, ...not provided for in the syllabus. Another Department stated that it was...in the process of being re-evaluated...after the final decision is taken a new strategy and mission will be formulated.

Among the universities that offered or jointly participated in a continuing education programme or workshop were UCT, UNITRA, UNP, UP, UWC, and UZ. The University of Cape Town ran a Workshop on Managing Resources in 1991. It was aimed at imparting LIS skills to resource workers without formal LIS qualifications. The University of Transkei in conjunction with the National Library of Transkei organized a workshop in 1992. It "...addressed the special needs of rural folk in their quest for information". Between 1989 and 1991 the Department at the University of Natal and the Natal Resource Centre Forum jointly offered a training programme as part of the Community Resource Centre

Training Project, while the University of Pretoria has run workshop(s) on community information centres ...and the role of information in development. On the other hand the University of the Western Cape indicated that the area of information provision to rural communities was included as a section in a general symposium. In 1993, University of Zululand offered a workshop on Public Libraries in a Post Apartheid Society in which rural communities were also covered. A request has been made for it be re-offered.

Among the technikons surveyed, one offers LIS programmes by distance education and because the preparation of instructional materials is too time-consuming, it can not currently offer workshops in this area. The general comment, as one would have expected from the Technikons is that their curricula does not currently "allow them to offer such workshops. Like university departments they also face staff constraints.

As a follow-up to the question of current course offerings, and in order to gauge the future outlook of the treatment of rural communities in LIS curricula a question to this effect was put to Departments. They were asked whether they thought there is any need for them to offer continuing education programmes, workshops, formal courses or modules on some aspects(s) of information provision to rural communities. All (fifteen) technikon and university departments, except one technikon agreed that there is a need. The one department which indicated that it did not see any need to offer such specialization stated that rural communities are and will be adequately attended to in a current general course under the concept of "small communities".

In response to the reasons for the need to offer some continuing education, workshop, formal course(s) or modules(s) on this theme, eight departments from Technikons and Universities simply reiterated without elaboration, that there was an obvious need. Two departments extended this by stating that it could be a good

theme for a workshop from which practising librarians would benefit. Five departments including those from both technikons and universities however, stated that assessment of information needs and how to handle them in various information communities such as, "rural communities", "disadvantaged communities", "black communities" should seriously be addressed through workshops, continuing education programmes or as part of the general LIS courses. One Department felt that rural communities are a "special community" and (without elaboration) should be specially addressed. Two Technikon departments stated that their student body was changing, more and more students were being drawn from disadvantaged rural communities and therefore there is an obligation to cater for them by offering courses with this theme in the future. In fact one of the option programmes envisaged to be offered in the future by one technikon is a Two-Year Certificate Programme for Workers in Community Libraries and Resource Centres.

Because of the varied expertise needed and staff constraints experienced by LIS departments generally and as noted above, running specialized courses or programmes such as information provision to rural communities may require collaborative effort. This has been evidenced by the way specializations like school, law, medical and agricultural librarianship are conducted. LIS departments would for example, collaborate with the faculty or department of education in running a school librarianship programme.

In this survey Departments were therefore, asked to indicate specific departments or institutes they viewed as potentially relevant partners in running such a specialization. Although different universities and technikons use variant names and structures of areas of study and research, these can be grouped into traditional fields. Table 2 shows the names of fields of studies representing departments, institutes and so forth and the

total numbers of departments which indicated that they would work with persons from such field(s) if the specialization programmes was to be offered. Where an unpopular field or sub-field and unit was given, for example, an Institute for Research in Children's Literature, no attempt was made to fit it into a "traditional/broad field" rather it was simply listed as such.

It is clear that most LIS Departments view Education, whether general or in its special form, such as adult education, literacy and agriculture extension as an important partner in running a programme on information provision to rural communities. Another important partner is the area of social development and services. They also see language departments as relevant. Although one can not make definite inferences from the above, it appears that part of the rural information services curriculum would involve some teaching of social dynamics as provided by sociology and development fields, and also some understanding of the process of counselling, as provided by social work. Also relevant in such a curriculum would be basic theories of learning and some aspects of agricultural extension. It is also obvious that language for the delivery of information would also be necessary.

The final part of the survey requested departments to list titles or themes of any research work, (using the term research very loosely) or publications currently being done or completed by students and staff on this topic in the last five years. The purpose of this question was to attain, in conjunction with the current course and workshop offering dealt with above, a better picture of the extent to which departments have attempted to deal with the problem of information provision to rural communities in South Africa. It is evident as can be seen in Appendix 2 which lists various works done or being done, that a number of Departments have committed some of their academic time to addressing the plight of the

Table 2 – Subject Areas/Departments Potentially Relevant in Offering the Specialization Programme

Subject Areas	Departments
Education	4
Languages (Depts.)	5
Literacy Programmes	3
Institute of Research in Children's Literature	1
Adult Education (and Extra Mural Studies)	5
Community Service Centre	1
Sociology/Social Work/Social and Development studies	6
Agriculture (Extension)	2

rural communities. There have been some student class papers, and theses, some completed and others currently being written. There have also been published articles and research by teaching staff in this area. However, when one considers the vastness and variant nature of South Africa's rural communities, there is a lot of work in terms of staff and student research projects, subsequent journal articles and students' class papers still to be done in this area.

Discussion and Conclusion

It is clear that while the need for uplifting the rural communities in South Africa in every way including that of information provision, Departments are not currently offering specialization in this area. It is also unlikely that stand-alone specialized programmes in education and training programmes in South Africa will be offered in the very near future. One of the major problems for this is first, the unclarity among the educators, information professionals and potential employers of the extent of the need for such specialization. The bottom line for both educators and indeed potential students is that of the cost-benefit of such a programme. Can such a programme pay for itself? How long will the need to run such a specialization last in order to warrant development of a pro-



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grammes in the similar manner like school or law librarianship? How marketable will the graduates of such a programme be? And will there be enough incentives in the rural communities to attract graduates of such specialization?

All these questions need definitive answers to warrant a stand-alone specialization programme for information provision to rural communities. It is not enough for departments and any other person to simply state, as evidenced by the responses reported in this survey that the need is there for such a specialization or to simply argue that rural communities are a special group and therefore warrant special treatment in the LIS education and training programme(s). How about the urban unemployed; gay persons; women or men and so forth? The reality of the situation for all university and technikon departments is that of the "number game". Attract more students and tuition money or be closed!

It also appears that it is very difficult to offer a stand-alone specialization in this area at the moment because most departments have many programmes currently being offered with few members of staff. It would be interesting for departments to review their effectiveness in running the various programmes they currently offer in view of their staff numbers and levels of this staff.

Again a major contributing factor for starting a new programme and employ additional staff to run such a programme is that of a clearly identified need and [monetary] viability of such a programme.

While it is argued and accepted that there are currently difficulties in offering a stand-alone specialization programme in this area, there seems to be adequate evidence that treatment of such area in LIS programme is necessary. The very fact that most the South African (and the rest of Africa for that matter) rural communities were disadvantaged means that a special strategy for provision of information in these areas must be planned by LIS Department. It is certainly anticipated that rural communities, which as we know have their own information needs, will require specially designed information services developed in each area. It will be naive for LIS educators to assume that by simply teaching prospective rural information service workers the traditional library and information science courses they will equip them for their tasks ahead. There is need to specially equip persons who will work with the varied rural communities, with various skills.

However, what is required is for those departments who decide, because of the need and their environments to offer specialization options

or part of the general core courses to be absolutely clear of the content of such courses or modules and workshops or continuing education programmes. Already it appears that Departments have identified various aspects that can be taught and kinds of specialized fields that need to be worked with in order to educate and train library and information workers for rural communities. It is clear that the assessment of information needs and how to handle them in various communities be they "rural communities", "disadvantaged communities" or "black communities", should be seriously addressed through workshops, continuing education programmes, option courses or parts of the core general LIS course at the basic professional level programmes, B.Bibl and Post Graduate Diploma. Departments should then encourage students at the higher levels to conduct studies and write on provision of information to rural communities.

As one colleague of the author of this paper suggests, it may be helpful for educators and indeed persons who are interested in the issue of rural communities to "...develop as a starting point a core workbook, with basic aspects in rural information services, that can be used in different situations"¹³ Such a workbook may include such examples of techniques for assessment of information needs in a community as discussed by this author in other papers.^{14,15}

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APPENDIX 1 – Departments and Institutions Offering LIS Education and Training

(A) TECHNIKONS

Name of Department—Institution and Address

- Library and Information Practice—Cape Technikon, P.O. Box 652, Capetown, 8000, Republic of South Africa
- Library and Information Practice—Port Elizabeth Technikon, P/B X6011, Port Elizabeth 6000, Republic of South Africa
- Communication/Library and Information Practice—M.L. Sultan Technikon, P.O. Box 1334, Durban 4000, Republic of South Africa
- Library and Information Science—Technikon Pretoria, P/B X680, Pretoria 0001, Republic of South Africa
- Library and Information Studies—Technikon RSA, P/B X6, Florida 1710, Republic of South Africa

(B) UNIVERSITIES

Name of Department—Institution and Address

- Information Studies—Potchefstroom University for Christian Higher Education, P/B X6001, Potchefstroom 2520, Republic of South Africa
- Information Studies—Rand Afrikaans University, P.O. Box 524, Auckland Park 2006, Republic of South Africa
- School of Librarianship—University of Cape Town, P/B Rondebosch 7700, Republic of South Africa
- Library and Information Science—University of Fort Hare, P/B 1314, Alice. Ciskei, Republic of South Africa
- Information Studies—University of Natal, P.O. Box 375, Pietermaritzburg 3200, Republic of South Africa
- Library and Information Science—University of the North, P/B X1106, Sovenga 0727, Republic of South Africa



Indexing

"Indexing is a form of contents description involving selection of the most appropriate terms to represent the contents of a document."¹ It allows the definition and identification of ideas or concepts and their representation in a suitable language and the creation of files to be used for information storage and retrieval. It aims at assisting the information specialist in the search and retrieval of information in order to answer users' requests.

The language used is composed of an artificial classification language, subjects of a natural language, subject headings and terms from a thesaurus.

There are two steps in the indexing process: conceptual analysis of a document, followed by the translation of these concepts into the language of the indexing system. This process is highly subjective. The main difficulty is to obtain and maintain consistency.

Criteria to Identify Indexable Concepts

When indexing a document, the indexer should ask the following questions in order to choose the correct concepts to index:

- To what extent is the document about a particular concept? Is there enough information about this particular concept in the document?
- Would the user searching for information on this concept, be satisfied to receive this document?
- Is there any likelihood of the concept figuring in a search query?

Procedures

The indexer should look at categories of concepts. For example: for the word **education** look for concepts such as:

- teaching methods
- course material
- testing...

Indexing is in fact the reverse of the process involved in the creation of the text.

For the writer: topics and concepts lead to text

For the indexer: text leads to topics and concepts

Guidelines

- selection of terms from title, abstracts, table of contents, introduction, conclusion and so forth
- in depth indexing: identify all concepts which have potential value for users
- do not over index: take concepts discussed, not just mentioned
- do not index if someone else's work is mentioned
- index methods and procedures only if they are discussed in depth
- index negative results, if provided
- do not add broader and narrower terms (adds confusion)
- use scientific names, but cross references should be provided for common names
- index geographical and climatological concepts

Vocabulary Control

Indexing can be done by one or several people. In any case, the results should be controlled before being integrated into the final catalog or database in order to ensure a consistent and reliable output.

To make the vocabulary control easier, use:

- standard word forms
- nouns (*heat* instead of *hot* or *roughness* instead of *rough*)
- the singular form such as *sugar* or *pencil* for names of specific materials
- plural form for materials such as *solvents*, *chemicals*
- synonym control
- preferred terms
- among synonyms choose the ones users prefer (users' way of talking)
- make the distinction between homonyms: *lead* (*metal*) and *lead* (*guide*)
- indexing aids such as thesaurus, existing indexes, and computer-assisted documentary language

Success of an Index depends upon:

- the indexer's background and experience: the indexer should have a specialist knowledge of the field treated;
- the indexer's knowledge of user population and information needs: the indexer must understand the users' needs and use of information;
- the quality of indexing tools available: updating guidelines to explain the procedures to follow, indexing input sheets or formats and so forth;
- and the indexer's efforts to maintain consistency in indexing.

Further reading on indexing:

1. Guinchat, Claire and Michel Menou, 1983. *General Introduction to the Techniques of Information and Documentation Work*. Paris: UNESCO, 124-131.
2. Forget, J. 1988. *Initiation à la documentation, information et développement: niveau initiation*. Paris: PUF, 118 p.

(over)

Indexation

L'indexation est un exercice qui consiste à décrire ou représenter le contenu d'un document, d'un livre (comme dans un index), d'un film ou d'une base de données. Elle en décrit le contenu en sélectionnant les termes les plus appropriés représentant ce dernier. Elle permet la définition et l'identification d'idées et de concepts, leur représentation dans un langage convenable et la création de fichier à utiliser pour le stockage et la recherche de l'information. Elle a pour objectif de faciliter au spécialiste de l'information, la recherche et l'accès à l'information en vue de répondre aux demandes des usagers. Elle poursuit deux objectifs principaux : représenter le contenu de quelque chose de telle sorte que le sens puisse être rapidement déterminé ; trouver rapidement une information spécifique (comme dans un index pour un livre ou une bibliographie).

Il peut être utile de concevoir l'indexation comme l'inverse du processus utilisé par les auteurs dans la création de leur texte. Ainsi pour un auteur, le sujet et concept aboutissent au texte alors que pour un indexeur, le texte aboutit aux mots clés et concepts.

Le processus d'indexation normalement comporte deux étapes : d'abord une analyse conceptuelle pour définir le contenu et ensuite, la traduction du concept ainsi défini en langage d'indexation. Ce processus est hautement subjectif. La difficulté majeure est d'obtenir et de maintenir la consistance.

Le langage d'indexation comprend normalement un langage de classification artificielle, des objets du langage naturel, des vedettes matières et des termes extraits d'un thésaurus.

Identification de concepts indexables

En indexant un document, l'indexeur devrait considérer les aspects suivants :

- A quel point le document traite-t-il d'un concept particulier?
- Y a-t-il suffisamment d'information sur ce concept dans le document?
- Un usager à la recherche d'information sur ce concept serait-il satisfait de recevoir ce document?
- Est-ce qu'il est probable que ce concept soit dans une formulation de la recherche?

Procédures

L'indexeur devrait tenir compte des différentes catégories de concepts. Exemple :

Pour le mot **vulgarisation** voyez aussi les concepts suivants :

- éducation des adultes
- technique de communication
- diffusion de l'information
- transfert de technologie

Conseils pour l'indexation

- sélectionnez les termes du titre, du résumé, de la table des matières, de l'introduction et des conclusions
- identifiez tous les concepts qui ont une valeur potentielles pour les usagers
- concentrez vous sur les concepts traités dans le texte, et ignorez ceux qui sont juste mentionnés
- n'indexez pas le travail d'un autre auteur qui est cité
- n'indexez les méthodologies et procédures que lorsqu'elles sont discutées en détail
- indexez les résultats négatifs, s'ils sont fournis
- n'ajoutez pas les termes spécifiques et généraux afin d'éviter la confusion
- utilisez les noms scientifiques en fournissant aussi les noms communs
- indexez les concepts géographiques et climatologiques.

Contrôle du vocabulaire

L'indexation peut être faite par une ou plusieurs personnes. Dans tous les cas, les résultats devraient être contrôlés avant de les fusionner avec le produit final (catalogue ou base de données), ceci afin d'assurer des produits consistants et fiables.

Afin de faciliter le contrôle du vocabulaire :

- utilisez des mots standards
- utilisez des noms (ex : "chaud" au lieu de "rugosité", ou "rugosité" au lieu de "rugueux")

- utilisez le singulier (ex : sucre) pour les noms d'une matière spécifique
- utilisez le pluriel pour les matériaux (ex : solvants, produits chimiques)
- utilisez les termes préférés
- parmi les synonymes choisissez ceux que les utilisateurs préfèrent (vocabulaire des utilisateurs, etc...)
- distinguez entre les homonymes :
- utilisez les thésauri, les index existants, le langage documentaire assisté par ordinateur, etc... Les indexeurs devraient toujours tester et utiliser les thésauri existants avant de développer leur propre modèle, car une bonne indexation est en réalité bien difficile, et devrait être faite sérieusement. Contrôlez d'abord si vous ne réinventez pas la roue.

Le succès d'un Index dépend :

- de la formation et de l'expérience de l'indexeur : il/elle devrait avoir des connaissances spécialisées dans le domaine traité;
- des connaissances de l'indexeur sur la population des utilisateurs et de leur besoins en information : il/elle doivent bien cerner les besoins des utilisateurs et l'utilisation de cette information. Les indexeurs devraient reconnaître que les besoins et demandes des utilisateurs sont primordiaux, et que les procédures d'indexation d'une autre personne doivent normalement être adaptées aux besoins locaux.
- des efforts de l'indexeur pour assurer la consistance en indexation : les indexeurs ne devraient pas avoir peur d'ajouter une terminologie spécifique adaptée à leur situation, mais ils doivent veiller à ce que ceci soit fait d'une manière consistante.
- de la qualité et de la disponibilité des outils d'indexation : guide mis à jour expliquant la procédure à suivre, fiches de saisie ou formats d'indexation, etc...

L'indexation exige une technique spéciale qui est acquise par l'expérience et la pratique. Pour ceux qui aimeraient en savoir plus, certaines organisations telles que la NAL, la FAO et le CIRAD peuvent vous assister, et fournissent même des formations sur l'indexation de l'information agricole.

Lectures complémentaires

1. GUINCHAT Claire, MENOU Michel. - *Introduction générale aux sciences et techniques de l'information et de la documentation*. Paris : UNESCO, 1991
2. FORGET J. - *Initiation à la documentation, information et développement : niveau initiation*. Paris : PUF, 1988. 118 p.

Prepared by Marie Josée Jehl, IAALD Education and Training Committee, May 1995.

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APPENDIX 2 — Published and Unpublished Works Related to Rural Information Service by Staff and Students of LIS Departments in South Africa

The Possible Influence of Children's Books in Teaching Cultural Groups About Each Other (In Progress, PUCHE:1994)

Reading Needs of Rural Children in South Africa (M.Bibl. In Progress, PUCHE:1994)

Outreach Services to the Disadvantaged Communities in South Africa (M.Bibl. RAU:1994)

The Use of Libraries for the Development of South Africa. Pretoria: UNISA, 1988. R.B. Zaaiman, P.J.A. Roux and J.H. Rytkeer (UNISA:1988)

"The Development of Alternative Library and Information Services for the Black Community in South Africa." *Mousaion* 11(1):100-111 1993 F. Fairer-Wessels and M.P. Machet (UNISA:1993)

"Appropriate Training for Rural Information Services: A Paper Presented at the Annual ALASA Conference, Richards Bay October 5, 1993. M.Z. Ibrahima (UNITRA:1993)

The Information Needs of Rural Communities (Based on Viedgesville) (In Progress, UNITRA:1993)

The Role of Public Libraries in Rural Communities in Natal. Johnstone (UP:1988)

"Information and Development" *The Information Society* vol 8. 1992 227-241. J.A. Boon (UP:1992)

An Investigation into the Information Needs of the Esikhaweni Township Residents. S.G. Mhlongo (UZ:1991)

Public Libraries in a Post-Apartheid Society. W.M. Vermeulen (In Progress, UZ:1994)

Public Library Services in the Empangeni/Richards Bay area. I.Y. Johnstone (In Progress, UZ:1994)

The Public Library as a Means of Development: Black Communities in Natal. I.Y. Johnstone (UZ:1988)

An Investigation into the Availability and Suitability of Zulu Children's Literature for Lower Primary School Pupils of Mehlwesizwe Circuit as a Pre-Requisite for the Cultivation of Reading Habits M.M. Nhlanhla (M.Bibl., UZ:1988)

Reading Interests of Standard Two Black Zulu-Speaking Children in DET schools in Pietermaritzburg Circuit 1, (and surrounding rural communities) T. Radebe (In Progress, UNP:1994)

An Exploratory Study of Information Needs in Kwa-Ngwanase (Natal) and Qumbu (Transkei) Rural Communities of South Africa. A.M. Kaniki (Manuscript in progress, UNP 1994)

The Oral Tradition, Literacy Development and Libraries. E. Prozesky (Readership Seminar, UNP:1990)

Qwaqwa Literacy Programme and Library Involvement. M. Sikwebu (Readership Seminar, UNP:1991)

Library Services in Kangwane. M.J. Nkambule. (Readership Seminar, UNP:1993)

Information Centres as Areas of Promoting Literacy. T. Pitsoe (Readership Seminar, UNP:1993)

The Role of Information Services in Rural Areas. M. Ngubane (Readership Seminar, UNP:1993)

Land Redistribution in South Africa: The Role of Various Organizations and their Resource Centres. E.L. Mphahlele. (Readership Seminar, UNP:1993)

A Critique of Rural Libraries in South Africa. Mphahlele, N. (Librarianship Seminar, UMP:1992)

Rural Information Disempowerment in South: A Contextualised Historical Study of Library Services for Rural Blacks. A. Leach, C. Stilwell and J. Verbeek (In Progress, UNP:1994)

"Problems of Access to Agricultural Information in Southern Africa" *Info Africa Nova Conference*, Pretoria, 7- May 1993. A.M. Kaniki (UNP:1993)

"Community Resource Centres and Resource Centre Forums in The Transformation and Post-Transformation Era in South Africa" *Journal of Library, Archives and Information Science* 4(1):47-54: (April 1994) A.M. Kaniki (UNP:1994)



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1092 AD Amsterdam, The Netherlands

Fax: +31-20-6654423

Tel: +31-20-5688298



CDS/ISIS User-To-User

Hugo Besemer

Making CDS/ISIS Databases Available on the Internet

This column describes a number of attempts to make information held in CDS/ISIS databases accessible on the Internet. There are different levels of connectivity to the Internet. Many users can only send and receive electronic mail. A higher level of connectivity is required for the Telnet or Remote Login protocol. It enables you to use your local system as a terminal to login on to a remote computer. The File Transfer Protocol enables you to transfer files between a remote computer and your local system. Full internet connectivity is required to use well known Internet navigation tools such as Gopher, Wide Area Information Server (WAIS) or World Wide Web (WWW). Examples of CDS/ISIS databases that have been made accessible for users with different levels of connectivity are reviewed below. If you know of other examples please write to the editor of this column.

Electronic Mail

The ISIS-Server is an example of an interface to a number of CDS/ISIS databases that can be interrogated by e-mail. It has been developed for the National Atomic Energy Commission (CNEA) in Argentina. It enables searching requests using the CDS/ISIS search language. It is not possible to refer to a previous search statement. To receive an explanation of how to use (in Spanish) send a message with the text AYUDA to

ISIS-SERVER@CNEA.EDU.AR

Leave the subject blank.

Before anybody gets frustrated:

Users who have only electronic mail access to the internet need not be deprived of all the information

that is accessible for users with a higher level of connectivity. There is a guide *Accessing The Internet By E-Mail : Doctor Bob's Guide to Off-line Internet Access*. To retrieve the guide from areas other than North America send a message to:

MAILBASE@MAILBASE.AC.UK

Leave Subject blank, and enter only this line in the body of the note:

SEND LIS-IIS E-ACCESS-INET.TXT

To retrieve this guide from the United States or Canada send a message to

LISTSERV@UBVM.CC.BUFFALO.EDU

Leave Subject blank, and enter only this line in the body of the note:

GET INTERNET BY-EMAIL NETTRAIN
F=MAIL

TELNET

Below are some examples of telnet sites from different subject and geographical areas where you can connect to database servers that run under CDS/ISIS.

RIBLAC (Biology Network for Latin America)

Telnet to BART.CONICIT.VE

Login as RIBLAC

Central Research Institute for Physics (Hungary)

Telnet to FSERV@KFKI.HU

Login as ISIS

Collective Serials Catalogue for the Mathematical Sciences

Telnet to SIBA1.UNILE.IT

Login as DSM

These are just illustrations; there are more sites. Most sites seem to run under UNIX; I do not know of a site that runs under MS/DOS.

GOPHER/WAIS/World Wide Web

I do not know of an example of an interface that makes it possible to search a CDS/ISIS database with a WAIS client. There is an example of

a WAIS database that is based on printouts from CDS/ISIS. Try

<http://info.rbt.no/>

or gopher://info.rbt.no

to connect to these databases.

The World Wide Web software enables so called WWW forms. These forms are in fact scripts that make it possible to search a database from a WWW-page in such a transparent way that users do not notice that they are connecting to an other program. Such forms have been developed for CDS/ISIS. Try

<http://galileo.imss.firenze.it/biblio/easyweb.html>

There are attempts being made to develop interfaces that enable starting MS/DOS applications from a Gopher or World Wide Web Server. However this is still problematic and such applications run at this moment on a true multi-user platform (UNIX, VMS).

Information About CDS/ISIS on the Internet

The archives of the CDS/ISIS electronic mail discussion group are accessible via Gopher. Gopher to

HEARN.NIC.SURFNET.NL

Other material (some programs, manuals etc.) are available via the World Wide Web on

[HTTP://WWW/BIB.WAU.NL](http://WWW/BIB.WAU.NL)

Hopefully the same material will be available soon from

GOPHER.BIB.WAU.NL

If anybody knows of other sites the editor of this column would appreciate hearing about it.

Send questions, comments and contributions to:

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NEWS from IAALD

From the President of IAALD

Troubled Waters, High Tides and Adieu to Joe Howard and the Old Board

Dear Member,

This is the first time I am addressing you in my new role as President of IAALD.

Let me start by thanking all of you who attended the IXth World Congress in Melbourne, 23rd to 26th January 1995, for your vivid and enthusiastic participation. We had a wonderful congress, and IAALD owes the Organizing Committee of AGRIAA, the Agricultural Information Association for Australasia, presided by Stuart Hawkins, much gratitude.

Ahead of us lies an exciting time, with technological revolutions but also with stormy weather. Internet has opened the doors to possibilities we did not dream of a couple of years ago and a new breed of (end) users of information has been born. At the same time we are suffering from severe budget cuts that, if they continue, are seriously threatening the quality of service our libraries and information centres have always been able to provide. Other bodies such as international publishers and subscription agents have entered what was solely a library activity and are now operating big/high speed document delivery services.

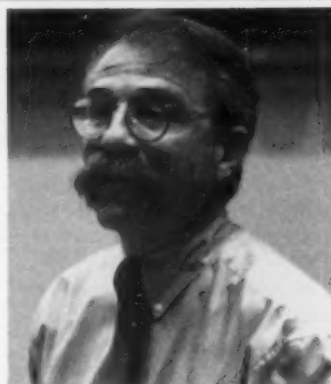
With less than 600 members IAALD seems to be just a tiny boat in the high waves. On the other hand, it is the only worldwide organization of agricultural information specialists. But that is, of course, not enough. The world has changed and so has our profession, implying that IAALD has to lead and, whenever possible, contribute to this new information policy. Should we write history? I don't think so. What is needed is a well defined mission

statement, a business plan for the years to come, a clear profile of who we are and what we stand for. The old board made a start and decided to ask the membership to help us in guiding IAALD for the next 5 years. To that purpose a considerable part of the General Assembly Meeting was spent in discussion in groups on the route IAALD should follow. Based on the outcome of this, the Executive Committee will meet for 2 days, next June, at the National Agricultural Library in Beltsville, Maryland, USA to write our scenario for the future, which we plan to publish in the Quarterly Bulletin or mail to you as part of a separate newsletter for you to comment upon.

While we are quite busy with this challenge, some existing activities continue.

The sales of our *World Directory* has created a training fund of about US\$50,000, which permitted us to hold seminars in Sri Lanka and Tanzania; others are foreseen to take place in Eastern Europe and in Latin America.

At the same time we are looking for organizations that are willing to host and organize the IAALD World Congress in 2000, or one of the regional or technical meetings in between. Two organizations have expressed their interest so far: the China-EC Centre for Agricultural Technology, CECAT, in cooperation with the Chinese Academy for Agricultural Sciences, CAAS, to host us in Beijing, and IAALD Afrique to host us in Dakar, Senegal. Organizing such congresses requires more than simply efficient facilities and will imply substantial time investment for an organizing committee. Also, given IAALD's limited financial strength, financial factors should be taken into consideration: if IAALD wants to develop an even higher profile, we should try to generate money out of such events,



Jan van der Burg, President IAALD

to be spent on our ongoing educational programmes in developing countries. If any of you are interested in hosting an IAALD congress, we would much appreciate your providing us with an overall action plan covering financial and human resources as well as possible themes and topics, among other relevant aspects. These should be sent to our Secretary/Treasurer, Margot Bellamy, c/o CAB International, Wallingford, Oxon OX10 8DE, United Kingdom.

Finally I would like to say adieu to our past President, Joe Howard and those of his crew that did not go for a next term: Eva Herpay, Jan Kennedy-Olsen, Wolfrudolf Laux, Bill Posnett, John Metcalfe, William Umbima, and Jacques Schippers. I look forward to working with the new board consisting of Syed Salim Agha, Margot Bellamy, Anton Mangstl, Toni Powell, Pam André, John Beecher, Janeti Bombini de Moura, Edith Hesse, Jodee Kawasaki, Thiendou Niang, Vyatcheslav Pozdnyadov, Carol Boast Robertson, and Josie Sison.

Best wishes,

Jan van der Burg
President

IAALD Holds Training Workshop in Sri Lanka

As announced in the *IAALD QB*, 39, no. 4, 1994, the IAALD Education and Training Committee organised a training workshop in Sri Lanka to support the agricultural information network in Sri Lanka, called AGRINET, in the development of a common database format for the network. This workshop was coordinated in collaboration with the Council of Agricultural Research Policy (CARP) of Sri Lanka.

The objectives of this workshop were:

- to provide an information system to help automation of library operations in AGRINET;
- to provide a common system which would promote the sharing of information by AGRINET and the compilation of common information

products—this system has been called AGRINET Information System (AIS);

- and facilitate the exchange and transfer of information between AGRINET and other library networks in Sri Lanka.

To prepare this training workshop, AGRINET planned 3 stages:

- The first phase was to develop a common information system based on CDS/ISIS software taking into account the needs of AGRINET members;
- the second phase, identified as the pre-workshop training programme, was to install this common system in AGRINET libraries, provide basic instructions on sites and sensitize the management of the various institutions about the training objectives. This took place at the end of November and beginning of December 1994.

• and the last phase was the 4 day workshop proper where further training was provided integrating the problems encountered during the on-site visits.

In total 21 members of AGRINET coming from 20 various Sri Lankan agricultural academic and research institutions attended this course which was held in Colombo between 15 and 20 December 1994. Training was only given to information specialists whose center was computerized. However, two institutions were especially motivated when their management were presented the training scheme to enable their staff to participate in the workshop.

IAALD was represented by Marie-Josée Jehl, Chair of the Education and Training Committee.

—submitted by Marie-Josée Jehl

New Officers and IAALD Board Members Elected

The General Assembly at the IXTH World Congress ratified a new president, secretary/treasurer, vice-president, and 6 ordinary board members. Vice President Syed Salim Agha, Editor Toni Powell, and Board Members Thiendou Niang, Carol Robertson, and Josie Sison stood for another term. The nominations and elections were carried out by the Nominations Committee: John Metcalfe and Jacques Schippers with the assistance of Scrutineers Chris Hamilton and Mike Hails.

After the validation of the nominations it was found that those members nominated but those members willing to serve exactly matched the required membership of the Executive Committee. For this reason there was no need for a second ballot. Addresses, including e-mail, of the IAALD Executive Committee for the period 1995–2000 are listed below. You are invited to contact any board member with your IAALD concerns.

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IAALD Election Report (Cont.)

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IXth IAALD World Congress Meets in Melbourne

Communicating Agricultural Information in Remote Places, the IXth IAALD World Congress drew about 120 delegates to beautiful Melbourne, Australia. The Congress began on

Sunday, January 22nd, 1995 with a welcome reception sponsored by the International Food Information Service. This event gave attendees an opportunity to make new acquaintances and renew old ones and was held in the beautiful rose garden of St. Mary's College, University of

Melbourne. The congress was opened by David Penington, Vice-Chancellor of the University of Melbourne and was followed with a welcome by Joe Howard, President of IAALD. The official opening address was by the Honourable Malcolm Fraser, former Prime Minister of Australia. This was followed by the keynote address given by Pamela André, Director of the U.S. National Agricultural Library, Beltsville, Maryland, USA. An invited address to be given by Mr. D. Assoumou Mba, Director of CTA, but due to illness was given by Thiendou Niang closed the first general session.

Other major papers were given by Colin Ogbourne, Pierre Dandjinnou, Helga Schmid, and Christine Silvy. The remainder of the conference offered attendees choices with 38 papers being delivered in concurrent sessions and a poster session. A dinner was sponsored by CABI on Thursday evening with the address being given by Emeritus Professor Derek Tribe, Executive Director, The Crawford Fund for International Agricultural Research. The breaks in the sessions offered attendees time to look at posters and discuss issues among themselves.



The conference was hosted by the Agricultural Information Association for Australasia (AGRIAA) and presided over by Dr. Stuart Hawkins, President of AGRIAA. IAALD thanks Dr. Hawkins and his

committee for providing IAALD with an excellent IXth Congress. The sessions were stimulating and the opportunity to network through breaks and lunches provided attendees with a great deal of information and ideas.

A more detailed report on the IXth Congress will appear in the *Quarterly Bulletin*, v. 40, no. 2.
—Toni Powell

Strategic Planning the Focus of the IAALD General Assembly Meeting at IXth World Congress

The General Assembly of the IAALD membership met on Wednesday, January 25, 1995 at the University of Melbourne. IAALD President Joe Howard presided at the meeting. Mr. Howard summarized what had been accomplished by IAALD over the past five years.

- Publication of the *World Directory of Agricultural Information Resource Centers*, 2nd edition compiled by Carol Robertson, Rita Fisher, and Jane Johnson, will be out in July of 1995. The first edition, published in 1990 has generated approximately US\$50,000 in income for educational projects in developing countries.

- Training and education activities, using money generated by sales of the *World Directory* and donations from members, have begun. Marie-Josée Jehl, chair of the working group, has concluded a successful training session in Sri Lanka and planning is in progress for sessions in Tanzania, Latin America, and Slovakia. Technical handouts are now being published and will be issued with the *Quarterly Bulletin*.

- IAALD has organized 2 conferences on new information technologies: in 1991 in collaboration with NAL in Beltsville, Maryland, USA, and in 1993 in Bonn, Germany as a joint activity with CTA and ZADI.

- Progress has been made on the multi-linguality of the organization. There have been 2 Francophone Round Tables, in Bordeaux(1992) and in Rabat (1993) leading to the Bordeaux declaration and the establishment of an African Francophone group, organized by Thiendou Niang and Jan van der Burg. IAALD brochures in three languages, English, French and Spanish have been published.

Reports

Secretary/Treasurer's Report—Jan van der Burg, Secretary/Treasurer reported that 75% of the regular income of IAALD is taken by the *Quarterly Bulletin*. Income was down due to low interest rates of the US dollar. IAALD is losing membership (from 618 in 1989 to 520 in 1994), being mostly institutional members, due to budgetary cuts. Projections for 1994 show a loss due to devaluation of the US dollar and to expenses made for the World Congress.

Editor's Report—the *Quarterly Bulletin* continues to be published four times a year with several double issues. Proceedings have been published for all of the IAALD sponsored Congresses and articles have been published in languages other than English. A Micro CDS/ISIS forum has been established as requested at the VIIIth World Congress and Hugo Besemer at PUDOC moderates. A user survey has been done to look for ways to improve the *QB* and the distribution of the *QB*.

The assembly was then split into

three groups to discuss the future of IAALD. The following questions were put to the membership for consideration.

1. What do you consider to be the IAALD mission and function?
2. What do you see as challenges facing the agricultural information professional?
3. What efforts should be made to increase IAALD membership?
4. In an attempt to increase membership, who should be the primary target group in terms of specialties (librarians, documentalists, publication officers, agricultural extension workers...) or geographical areas?
5. What products and services do you expect from IAALD in the future?
6. How do you see IAALD tackling products and services issues considering the diversity of members in terms of level of education, language, cultural background and facilities to access information products?
7. What are the major growth areas for IAALD?
8. What type of partnership should IAALD develop with regional and international organizations?
9. Indicate organizations with whom IAALD should develop joint programmes or projects (please give if possible areas of collaboration and a name of a contact person)?
10. Any additional issues?

The results of this survey will be published in *Quarterly Bulletin*, v. 40, no. 2.

IAALD Executive Committee 1990–1995 Meets one Last Time

The 1990–1995 Executive Committee met for one last time at St. Mary's College in Melbourne Australia to

wrap up their tenure in office. The focus of the meeting was to organize the business that was to be passed on to the new board. Joe Howard briefly explained the following two items from the EC Meeting held in Rome

in June of 1994.

Funding of participants to the World Congress: Funding was secured only through CTA for 5 participants. Responses from other bodies such as IDRC, Kellogg, and Cargill

IAALD Executive Committee Meets (Cont.)

were negative as agriculture does not play a key role in their mission anymore. Fund raising will continue to be difficult.

Currency problems in developing countries: Thiendou Niang has prepared a paper concerning the currency problems in developing countries. The membership fee to IAALD represents a monthly salary for some of the individuals and bank charges add to this cost. Several proposals were offered such as longer membership for members for developing countries (i.e. 3 years as opposed to one), use of UNESCO coupons, or perhaps having people in developing countries sponsor a member in a developing country. This matter will be taken up with the new board in June.

Secretary/Treasurer's report: The 1994 accounts were distributed with QB v. 39, no. 3 to the membership. IAALD is losing members and for 1994 our membership was slightly over 500.

Nominating Committee Report: John Metcalfe reported that the nominations were carried out according to IAALD Constitution. After elimination of invalid nominations the number of valid ones appeared to match exactly the number of positions

to be filled and no elections were needed. The process was a problem as some members misinterpreted the nomination ballot as a voting form, many nominees had not been asked if they would be willing to stand, and that institutional members can only have one named representative. Linguistic problems may have added to the confusion. The procedure led to much confusion and dissatisfaction. The constitution does not provide enough detail and cannot be changed without the consent of the general assembly. It was decided that procedures for election need to be drawn up for the rules of procedures and Thiendou Niang agreed to work on that problem.

World Congress: Stuart Hawkins reported that simultaneous translation for English and French would be provided for the general sessions of the World Congress. Spanish translation would not be provided as the response from Spanish speaking members was very low.

Editor's Report: Article stock for the QB is adequate but subject coverage needs to be broadened. The majority of the articles continues to come from developing countries and we need a better balance between developed and developing countries. The page count for 1995 was much higher as the papers from the Bonn

Symposium was 232 pages. That put us 100 pages over the normal number of pages for publication but the advance sales to CTA and ZADI more than covered the additional costs. QB v. 39, no. 4 also contained the first training aid. The readership survey has been analyzed and common problems identified. Solutions to these problems will be worked on in the coming year.

World Directory: A financial report of the World Directory 1989-1994 was presented by Chair Carol Robertson. Total income for the World Directory 1990 was US\$83,549.42 while expenses were US\$36,352.35. A net income of US\$47,197.07 was realized and transferred to the Education and Training Account. The new directory will include e-mail information and will reflect the political changes in Eastern Europe. This directory will not go to press until enough pre-publication sales cover the expenses.

Education and Training: M-J Jehl reported that training had been done in Sri Lanka (see report elsewhere in this issue) and the first technical handout had been issued in *Quarterly Bulletin*, v. 39, no. 1 with future handouts to be done in the following year.



NEWS from IAALD

World News in Brief

In Memoriam— Ricardo Juan Lois— Una vida dedicada a la Bibliotecología 1908–1995

Con el fallecimiento, ocurrido el pasado 27 de Enero de Don Ricardo J. Lois, la bibliotecología argentina se ve privada de una figura de relieve excepcional.

Egresado de la Escuela de Bibliotecarios del Museo Social Argentino en el año 1944, desempeñó funciones importantes en el Ministerio de Agricultura y Ganadería de la Nación, como Bibliotecario de la División de Fitopatología, luego Jefe Técnico y posteriormente Segundo Jefe del Departamento de Bibliotecas, organizando o asesorando además, importantes bibliotecas zonales que luego pasaron al Instituto Nacional de Tecnología Agropecuaria (INTA), designándose oportunamente delegado ante el Ministerio de Educación para intervenir en la creación del Centro Interamericano de Documentación propiciado por la UNESCO. Simultáneamente reorganiza técnicamente la biblioteca agrícola más antigua del país, perteneciente a la Sociedad Rural Argentina, a cuyos primeros fondos contribuyó con entusiasmo Domingo Faustino Sarmiento, siendo ministro argentino en los EE.UU.

Fue fundador y ocupó la Presidencia de la Asociación de Bibliotecarios Graduados de la República Argentina (ABGRA), que lo delegó para integrar el Comité de Informaciones de Relaciones Públicas de la Comisión Nacional para UNESCO.

Se desempeñó también como Vocal de la Comisión Protectora de Bibliotecas Populares.

Junto a su esposa, Dña. Leonor Ruiz, dictaron numerosos cursos de bibliotecología en los Institutos Bernasconi y "SUMMA", ambos de

Capital Federal, como así también en el interior del país.

Fue autor de numerosas publicaciones sobre su actividad profesional en Buenos Aires y en España, donde realizó investigaciones en el Archivo de Indias.

En el año 1991 ABGRA lo distingue, junto a otros destacados pioneros de la bibliotecología argentina con el "Premio ABGRA 50 años con la bibliotecología".

Dos seminarios, el de la Facultad de Teología de Villa Devoto y el de la Santa Cruz, que pertenece al Obispado de Lomas de Zamora le confiaron la organización de sus valiosas bibliotecas. Fruto de esta erudita labor que cumpliera junto a su esposa, es el "Catálogo de Libros de los Siglos XVI y XVII", aparecido en 1993.

Quien escribe estas líneas tuvo el privilegio de haber recibido sus enseñanzas en una práctica realizada en el Departamento de Bibliotecas en el año 1968 y anteriormente en el Instituto "SUMMA", habiendo cultivado su amistad desde entonces.

Lois fue un maestro; entre sus virtudes acaso sea la mayor la generosidad con que brindó sus profundos conocimientos y el entusiasmo que supo inculcar a sus alumnos y discípulos hacia la profesión que había abrazado con pasión.

Al margen de su actividad profesional, Lois fue un hombre cabal, íntegro, humilde, austero, que desconoció rencores y celos y que alentó permanentemente un sensato optimismo.

Con est breve recordación, rendimos a Don Ricardo el sencillo pero cálido homenaje que merece en grado superlativo un auténtico valor profesional y humano. Paz a sus restos.

—por Osvaldo H. Tuya

Electronic Library System Prototype to be Developed

The Institute for Scientific Information (ISI) in Philadelphia, Pennsylvania, USA and International Business Machines (IBM) announced a joint study to develop a prototype electronic document storage management and distribution system for ISI's Electronic Library Project. The objective of this project is to allow publishers and users of scholarly information to test the many variables relating to the electronic distribution of information. Initially, the prototype will provide users with desktop access from their own local area network (LAN) environments to the bibliographic data, abstracts, tables of contents, full text, and full images of the 1,350 scientific journals contained in the Life Sciences edition of ISI's *Current Contents*. This collaborative project will also serve to evaluate new technologies for use in future digital library systems. Using IBM's modular, client/server solution, ISI's subscribers would have direct local access to customized selections of information. Network connections between local "library servers" and ISI's "enterprise server" would permit subscribers to easily order copies of information not contained in their local collections and enable ISI to deliver updates to local collections and provide for account control and customer usage information. Other key areas that will be explored in the project include:

- Practical applications of electronic journals (data access, retrieval, and usage) from the perspectives of publishers and users, including issues related to copyright and intellectual property rights.

- Systems required to facilitate use of the electronic libraries,

World News in Brief (Cont.)

including billing, accounting, and business management reporting.

- Pricing scenarios to determine how to meet the diverse needs of both the publishing and user communities.

- Usage Patterns to determine if, and how, the electronic journal will change traditional information purchasing usage.

IBM's client/server design will provide ISI with the means to manage a large database and allow its customers to view the information on personal computers that run the most popular operating systems (such as OS 2, DOS/Windows, Macintosh and UNIX) and are connected by commercially available LAN software (such as Lan Server, Novell, Appletalk, and TCP/IP). IBM's solution is based on many technologies pioneered at its Almaden Research Center (ARC), the birthplace of the relational database, in San Jose, CA. The design incorporates products of IBM's PC Server organization (servers), Storage Systems Division (magnetic and optical disk drives and libraries and data storage management software) and Software Solutions Division (the DB2 relation database family). New technologies from ARC include those that provide advanced database functions, integrate text and image applications, and address copyright security issues.

For more information contact:

Jacqueline H. Trolley
Corporate Communications
Institute for Scientific Information
3501 Market Street
Philadelphia, PA 19104-3389
USA
Phone: 215-386-0100, ext. 1449
Fax: 215-387-1225
E-Mail: jtrolley@isinet.com

or

Michael Ross
Communications & Community
Relations
IBM Almaden Research Center
650 Harry Road
San Jose, CA 95120-6099
USA
Phone: 408-927-1283
Fax: 408-927-3011
E-Mail: mikross@almaden.ibm.com

IFLA Voucher Payment Scheme Launched

A Voucher Payment Scheme for international lending has been launched by the International Federation of Library Associations and Institutions Offices for UAP and International Lending. The vouchers cost US\$8 each, and half-vouchers are also available for US\$4 each. Payment must be made in US dollars drawn on a US Bank. There is no administrative fee but bank charges are not paid. Payment must be sent with the order and proforma invoices are available if required. There is a minimum order of US\$100 for the vouchers but any combination of vouchers may be ordered. For more information contact:

Sara Gould
The IFLA Voucher Scheme
IFLA Offices for UAP and
International Lending
c/o The British Library
Boston Spa, Wetherby
West Yorkshire LS23 7BQ
UNITED KINGDOM
Telephone: 44-1937-546254
Fax: 44-1937-546478
E-mail: sara.gould@bl.uk

IIPMWG Launches Newsletters

The International IPM Working Group was established in 1989 to promote the implementation of Integrated Pest Management (IPM). The group disseminates information on IPM issues through the newsletter *IPM Working for Development*. In addition to the hardcopy, two electronic versions are produced. The plain ASCII text is available on the IPMNet server in the United States (see QB v. 39, no. 4 p. 350) and the DISCUS server in Europe. In addition a World Wide Web version is produced and held at the Wageningen Agricultural University Server. To access IPMNet telnet to:

cicp.biochem.vt.edu

and to access DISCUS telnet to:
discus.dante.net

If you wish to receive a printed

copy of the newsletter or to contribute an article contact:

Atalanta Christophers
IPM Working Group, NRI,
Chatham Maritime
Chatham, Kent, ME4 4TB
UNITED KINGDOM
E-Mail: nri@uk.ac.uk

For a copy of the electronic version of the newsletter contact:

Chris Addison
Communiqué
149, Kingsbury
Maynooth
Co. Kildare,
IRELAND
E-mail: communique@gn.acp.org

an e-mail discussion list for IPM issues is being prepared for the European IPM Working Group.

International Ecological Agricultural Network

The International Ecological Agricultural Network (IEAN) aims to promote environmentally sound farming practices and to bring sustainable agriculture into the mainstream. IEAN was established in November 1992 in response to the deliberations during the UNCED process; NGOs and researchers identified the need for an international network to support and help coordinate existing efforts to make them more effective. IEAN's role is to enhance the work of existing organizations to fill the gaps and to facilitate a flow of information to and from the grassroots. IEAN aims to provide a forum for a diversity of organizations interested in developing countries, promoting or simply gaining expertise in sustainable agriculture and in mobilizing the resources to achieve it. IEAN also actively seeks to involve women's organizations, aiming to achieve a gender balance in their operations, while also supporting the role of women in agriculture. For more information contact:

IEAN
139 rue de L'Hospice Communal
B-1170 Brussels
BELGIUM

—adapted from *Spore*, no. 54, December 1994

European Veterinary Libraries Group Proposed

The formation of the European Veterinary Libraries Group (EVLG) was proposed as a section of the European Association for Health Information and Libraries (EAHIL) at the fourth EAHIL conference in Oslo, Norway. The action is pending EAHIL Board approval. The goals of the group are to unite all those who are interested or employed in the animal health information field; to develop and encourage cooperation among veterinary medical libraries; to present a forum to exchange ideas and to discuss mutual problems; to maintain the link with other international organizations in the field such as the European Association of Establishments for Veterinary Education (EV) and the World Veterinary Association (WVA). Prospective EVLG members must first join EAHIL at a cost of BFR 130 (or 48 ECU) a year. The next EAHIL meeting is on September 18-21, 1996, in Coimbra, Portugal. For information regarding EVLG contact:

Dr. Paul W. van Olm
Library, Institute for Animal Science
and Health
Edelhertweg 15
P.O. Box 65
8200 AB, Lelystad
THE NETHERLANDS

For information on EAHIL membership contact:

Ms. R. Hoet
60 rue de la Concorde
B-1050 Brussels
BELGIUM

IFLA Call for Papers

The IFLA (International Federation of Library Associations) Standing Committee on Science and Technology Libraries and the User Education Round Table have issued a call for presentations for its co-sponsored workshop at the IFLA Annual Conference in Istanbul, Turkey from August 20 to 26, 1995. Presentations are being sought that

deal with access and use of electronic journals with some focus towards instructional issues. Please consider electronic journals in the broadest sense possible to also include the distribution of preprints over the Internet and the unpublished electronic conferencing that takes place via listservs and newsgroups. As this is a workshop format, presentations can be either informative or issue-oriented that elicit discussion. Abstracts and outlines received by March 10, 1995 will be considered first. If interested in making a presentation at the workshop, please send an abstract or detailed outline to:

Martin Kesselman, Chair
IFLA User Education Round Table
Rutgers University Library of Science
and Medicine,
P.O. Box 1029, Piscataway
New Jersey 08855
USA
Telephone: 908-445-3850
Fax: 908-445-3208
E-mail: kesselman@
zodiac.rutgers.edu.

Law of the Sea Institute Promotes Oceanic Research

The Law of the Sea Institute's mission is to be a neutral and unbiased international forum of the freedom of the seas. The Institute is concerned with the future of the ocean regime. Scholars, officials, and practitioners from many nations seek intellectual consensus through the Institute. Consensus, once achieved, finds its way through official procedures into treaty law. In this way, the Institute serves the international community. Conferences and workshops bring together experts from all relevant discipline and professions; statesmen, scientists, policy experts, and legal specialists. Since 1978 the Institute has joined forces with a powerful network of co-sponsors to further internationalize the Institutes program. The Institute publishes the proceedings of their conferences and workshops and a series of occasional papers.

These books comprise a history of the development of ocean policy from 1966 to the present. A publications list is available upon request. Support for these programs has come in past years from agencies of the U.S. Government such as the Sea Grant Program of the National Oceanographic and Atmospheric Administration, the National Science Foundation, the U.S. Information Agency, and the U.S. Coast Guard; from the University of Hawaii and the University of Hawaii Foundation; from private foundations and trusts; from corporations; and from individuals. Since 1977, host institutions have shared in the organizational costs of each of the annual conferences. The Institute's publications are produced through its revolving publications fund, established by the Andrew W. Mellon Foundation. The governing body of the Law of the Sea Institute is its international Executive Board. The board is appointed by the President of the University of Hawaii on nomination by vote of the incumbent board members. The President also designates a University of Hawaii representative. For more information:

Law of the Sea Institute
William S. Richardson School of Law
University of Hawaii
2515 Dole Street
Honolulu, Hawaii 96822
USA
Telephone: 808-956-3300
Fax: 808-956-6402
Telex: 7431895 (ITT) SEALAW

Rothamsted International Formed

The Rothamsted Experimental Station in the United Kingdom celebrated its 150th anniversary by launching Rothamsted International in 1993. This major initiative was originally conceived as a means of making Rothamsted's expertise and facilities more widely accessible to scientists overseas, particularly in developing countries. Rothamsted International aims to foster collaborative research programs with national and international centres in

World News in Brief (Cont.)

developing countries and to offer fellowships to visiting overseas researchers to establish two-way institutional links and information exchange. Rothamsted Experimental Station has a long standing interest in the chemical and biological processes that influence soil fertility, and has major programs on the cycling of nitrogen and carbon in soils and on the movement and fate of agrochemicals. Rothamsted also collaborates closely with CAB International's institute of parasitology and their combined collection of live temperate, tropical and sub-tropical nematode cultures is the largest in the world. An Overseas Development Association (ODA) funded Biometrics Unit advises on statistical problems associated with crop, agroforestry and animal experimentation also provides training on statistics and computing. For more information contact:

Professor J.M. Anderson
Chief Executive, Rothamsted
International
Rothamsted Experimental Station
AFRC Institute of Arable Crops
Research
Harpenden
Herts AL5 2JQ
UNITED KINGDOM

—adapted from *Spore*, no. 53, October 1994

U.S. State Fact Sheets by FAX Now Electronic

The U.S. Economic Research Service State Fact Sheets by fax are now available over the Internet. Each state now has an electronic data file containing the same numbers as the State Fax Sheets. Internet and bitnet customers can pick up the electronic files by using the two letter state abbreviation and the word DATA to pick up the state you want. For example to receive the electronic data file on Kentucky, send e-mail to:

LISTSERV@ERS.BITNET

In the body of the note, type on a single line:

GET KY DATA

For more information contact:

DHOPKINS@ERS.BITNET

or

TCARLIN@ERS.BITNET

Telephone: 202-219-0944

—adapted from *Capsules* v. 4, no. 9, September 1994

Foundation for Sustainable Development in Africa

The Foundation for Sustainable Development in Africa (FSDA) is a charitable trust which aims at promoting the formation and function of dynamic self sustaining communities through effective networking. FSDA aims to foster interaction and exchange of information and networking among Kenya agricultural communities and between them and other agricultural communities throughout Africa. The Foundation facilitates the development and functioning of on-farm dissemination centres; they also train and equip young people and others with knowledge and skills in management of environmentally sound farming practices which favor sustainable development. Another activity is the promotion of harvesting, storage and marketing of surplus farm produce from local small scale farmers, as well as the enhancement of both indigenous and introduced food processing technologies in order to minimize household food losses and wastage. For more information contact:

FSDA
P.O. Box 22415
Nairobi
KENYA

SIGCAT'95 to be Held

The 4th Annual Conference on CD-ROM Applications and Technology sponsored by The Special Interest Group on CD-ROM Applications and Technology (SIGCAT), (member of the Federation of Gov-

ernment Information Processing Councils—FGIPC) met in May in Reston, Virginia, USA. The meeting focused on many areas of CD-ROM including papers on: CD-ROM software; CD-ROM applications in library information technology; CD-ROM applications in education; and CD-ROM GIS Applications and Technology.

For additional information contact:

Online, Inc.
1-800-248-8466
Internet: online@well.sf.ca.us

ICARDA Update

The first phase of an in-house ICARDA Agricultural Database (ICAD) was completed by downloading 310,000 bibliographic records, relevant to ICARDA's research interests, covering the period 1970–1992 from AGRICOLA and CABI databases. ICAD was created on the ICARDA VAX system using the CDS/ISIS program and made available on-line to users at the ICARDA headquarters. A three-week training course in library management and the use of modern information technology was organized within the framework of Agricultural Information Network in West Asia and North Africa (AINWANA). Nine information personnel from six WANA countries participated. In addition, three national librarians received individual training in library management and the use of CDS/ISIS and CD-ROMs for information management and retrieval. In-house instruction of the use of CDS/ISIS was provided to 10 ICARDA researchers. A joint project proposal was initiated with CIHEAM for developing a database/bibliography on durum wheat in North Africa. Participation in AGRIS continued and reporting to CARIS (Current Agricultural Research Information System) was initiated.

—adapted from *ICARDA Annual Report*, 1993



IIED, WRI, and IUCN Collaborate on INTERAISE

The International Environmental and Natural Resource Assessment Information Service (INTERAISE) is a collaborative project undertaken by the International Institute for Environment and Development (IIED), the World Resources Institute (WRI), and the World Conservation Union (IUCN). The project began in 1990, in recognition of the problem of locating and accessing environmental information at a national or regional level in and for developing countries. The project had two principle goals: to identify and locate key national environmental and natural resource assessment documents, and to make this information available to those who need it in developing countries and in the development aid community. The information is aimed at those who are engaged, for example, in environmental research, policy making, planning or management. The INTERAISE documentation collection includes environmental profiles, national conservation strategies, Tropical Forestry Action Plan (TFAP) reviews, environmental action plans, United Nations Conference on Environment and Development (UNCED) national reports and similar documents which provide information—particularly statistics, maps and charts—at regional and national level on the environment and natural resource base in developing countries. A central information service is operated by IIED in London. The service provides photocopies, at cost, of any documents in the collections that are not available from other sources. In addition, regional information centres have

been established in institutions around the world: six in Africa, five in Asia, two in Latin America and one in the Caribbean. An annotated bibliography of all the documents is included in the INTERAISE library. *The 1993 Directory of Country Environmental Studies* has been published by the World Resources Institute (WRI) and is available from IIED at GB£12. This bibliography provides a concise abstract of each study and cites the author, sponsoring and collaborating organizations, publication date, language and availability. A companion diskette gives quick access to the information contained in the printed edition of the *Directory* plus a number of older documents can be used to identify documents relating to a particular region or country. This is also available from IIED at a cost of GB£30. Both the *Directory* and diskette will be updated in 1995 and it is hoped to include information on the OECD countries as well. For more information contact:

INTERAISE Project, IIED
3 Endsleigh Street
London, WC1H 0DD
UNITED KINGDOM

or

WRI
1709 New York Ave, NW
Washington, DC 20006
USA

or

IUCN
Rue de Mauverney 28
CH 1196 Gland
SWITZERLAND

—taken from *Sporo*, no. 54, December 1994

Fifth Conference of Librarians in International Development Held

The Conference of Librarians in International Development provides a biennial forum for discussions of current theoretical and practical developments in librarianship and related fields involved in information work in international development. The fifth conference theme was a global conversation about information transfer. The conference

was held April 30–May 2, 1995 in Kansas City, Missouri USA. Invited speakers included Liz Bishoff, Vice President, Member Services, OCLC who discussed online information services in the international arena; Ching-Chi Chen, Associate Dean, Graduate School of Library and Information Science, Simmons College who talked about the planning of the global information infrastructure and Cynthia Dobson, Iowa State University who discussed document delivery to developing countries. For more information contact:

Herbert K. Achleitner
School of Library and Information
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AAAS Sub-Saharan African Program Aids Libraries

The American Association for the Advancement of Science (AAAS) Sub-Saharan Africa Program was inaugurated in 1987 as an initiative to provide African libraries with current subscriptions to journals in the sciences and the humanities. This project has broadened its focus to incorporate activities that promote CD-ROM usage and strengthen the institutional capacity of research libraries. The overall objective to the project remains the same: to collaborate with African libraries in an effort to meet the information needs of scientists and scholars who require access to current literature in their disciplines. In partnership with US scientific and learned societies, AAAS is able to supply almost 200 journal titles in the sciences and humanities that they publish to research libraries in 38 sub-Saharan African countries. As a result of this effort, over 3,000 subscriptions reach African institutions hard put to find funding to maintain their serials collection. The journals provided through this effort are made available to AAAS at little or no cost.

World News in Brief (Cont.)

Grants cover air freight shipment to Africa. In 1991, AAAS was able to supplement the print journals already in the program with a small number of bibliographic and full-text databases on compact disc. The number of CD-ROM materials is expected to grow.

The AAAS has engaged in a number of initiatives to promote communication among African librarians and to examine the capacity of research libraries to provide services. In 1991 the Sub-Saharan Africa Program launched a biennial newsletter, *Notes*, for librarians receiving journals under the auspices of the program. The goals of the newsletter is to provide an opportunity for African libraries to exchange information, such as projects underway in their libraries or meetings they have attended. The newsletter also contains information on organizations in addition to AAAS that donate scholarly literature (text-books, reference materials, journals, etc.) AAAS has conducted several studies as well, all resulting in reports available from the program. In 1990 the program surveyed recipient institution libraries to ascertain their computer and CD-ROM capability. The questionnaire requested information on hardware and software, funding, maintenance and training, user access, interlibrary cooperation, and the documentation of indigenous research. More than half the libraries surveyed, including those located in almost every major university library in sub-Saharan Africa, returned questionnaires. In 1992, AAAS began to follow up on the analysis of information management issues in sub-Saharan African research libraries, with a focus on budgets, acquisitions, planning, and equipment. Almost all of the 40 selected libraries receiving questionnaires have responded. Also, in 1992, the Sub-Saharan Africa Program conducted a study in Mozambique and Angola to assess the need for scientific and scholarly serials

and monographs in Portuguese and to examine how those needs can best be met with literature published in Portugal and Brazil. The University of Zimbabwe and the AAAS are co-organizing a workshop for university librarians from Eastern and Southern Africa on strategic planning issues, with a focus on how technology can improve services. The workshop, which was timed to coincide with the Zimbabwe International Book Fair, took place in Harare in August 1993. The reports and publications of the AAAS Sub-Saharan African program are available at no cost. For more information contact:

AAAS Sub-Saharan Africa Program
1333 H Street, NW
Washington, DC 20005 USA
Telephone: 202-326-6730
Fax: 22-289-4958
Telex: 248933 SCIEN UR
E-Mail:
AFRAAS@GWUVM.GWU.EDU

CIAT Publishes IPRA Handbooks

A set of nine handbooks were published by IPRA, CIAT's Participatory Research Project, with a grant from the W.K. Kellogg Foundation. The books share the first-hand knowledge of six local agricultural research committees (known as CIALs). These small-scale farmers, pioneers of participatory research, have worked with IPRA researchers since 1990. Each handbook introduces a step in the process of forming or operating CIAL research groups and describes the research done for that stage. The books are designed for hands-on use by farmers, extension workers, and researchers interested in participatory research. Specific examples explain each procedure. For example Handbook 5, *Planning the Experiment*, describes how a CIAL chooses where to test new maize varieties for the area. The simple Spanish text is written in the language of farmers. Large drawings reinforce the text for those who cannot read. More than 100 of the farmers involved in the original research edited both the texts and drawings. The handbooks have been

translated into English for release in 1995; they are being tested in Africa. A Portuguese version is also planned. A training program is planned for Asian countries in 1996, with translations to local languages. The nine volumes are:

The Experiment; Local Agricultural Research Committees; The Diagnosis; The Objective of the Experiment; Planning the Experiment; Evaluating the Experiment; Things That Can Go Wrong; Sharing the Results of our Experiment; and A True Case. The handbooks are available singly or in complete sets. The price for each volume is US\$5 for developing countries and US\$8 for developed countries. Available from:

Distribution Section
CIAT
A.A. 6713
Cali, COLOMBIA

INTERPAKS Short Courses

The International Program for Agricultural Knowledge Systems (INTERPAKS) aims to strengthen agriculture institutions in developing countries that serve the educational, technical, and management needs of farm households. The primary goals are board-based, sustainable agriculture and rural development, its central integrating theme is international extension and the process of technology transfer and human resource development. Listed below is the short course schedule for 1995. The cost includes the course fee, medical insurance and living expenses. It excludes air fare to and from Champaign, Illinois, USA.

Short Course: Organizational Communications

Application Deadline: May 1, 1995

Arrival Date: June 11, 1995

Departure Date: July 1, 1995

Cost: US\$4,400

Short Course: Organizing & Reaching Women Farmers

Application Deadline: May 26, 1995

Arrival Date: July 9, 1995

Departure Date: August 5, 1995
Cost: US\$5,600

Short Course: Extension Management

Application Deadline: July 14, 1995

Arrival Date: August 27, 1995

Departure Date: September 28, 1995

Cost: US\$6,300

Short Course: Rural, Community & Economic Development

Application Deadline: August 25, 1995

Arrival Date: October 8, 1995

Departure Date: November 6, 1995

Cost: US\$6,200

For more information contact:

Director of INTERPAKS
Office of International Agriculture
University of Illinois at Urbana-Champaign
109 Mumford Hall
1301 W. Gregory Drive
Urbana, IL 61801
USA
Telephone: 217-333-5832
Fax: 217-333-5835

LC Promoting the National Digital Library

The U.S. Library of Congress (LC) hosted a session on October 21, 1994 for directors of the U.S. Association of Research Libraries (ARL) to explore possible collaborative efforts within the U.S. research library community to create "a national digital library." Upcoming LC efforts were described including pilots in the intellectual property arena to work with libraries, publishers, the Copyright Office, and others on a variety of different licensing schemes, CIP efforts, and participation in one of the NSF/ARPA/NASA digital libraries grants. Each of these efforts represent different steps and approaches by LC to incorporate and integrate electronic and networked-based services into current

services. Initially, historical collections in the public domain will be digitized. These LC collections will be "freely" available via multiple formats including the Internet and from publishers who choose to add value. It is anticipated that a latter phase of the project will include material protected by copyright. LC staff are rethinking how to redesign CIP as is practical, and prior to digital conversion, the means by which materials are organized and identified on the front end to capture useful information electronically; identifying technical issues relating to different collections; and in agreement that utilizing non-proprietary user interfaces will be critically important. This session was one of a "series of conversations" that the LC will conduct to assist in planning phase for a national digital library. The first session held in early September was focused on technology issues. A third session focused on user needs is planned, and schools, public libraries, and organizations representing users will be invited to attend.

—taken from a report by Prue Adler

INASP Databases Ready for Distribution

The International Network for the Availability of Scientific Publications (INASP) has produced an interface to make publicly available the relevant information in the INASP database to facilitate the matching of network members. The database includes the names, contact, address, communication numbers, country, and nature of the donor/requester as well as language of operation, services, materials and subjects, partners (links) and remarks. Online help is available throughout the whole program. The interface comes on one disk. It operates under DOS and requires a 286AT computer or higher, a high density 3.5" floppy drive, 2MB hard-disk space, and at least 1 MB of RAM. The lists also provides information about requesting libraries. For price and more information contact:

INASP
P.O. Box 2564
London W5 1ZD
UNITED KINGDOM
Telephone: 44-181-997-3274
Fax: 44-181-810-9795
E-mail: inasp@gn.apc.org

—adapted from *INASP Newsletter*, no. 3, November 1994

African Journals Distribution Programme (AJDP) Now Established

The African Journals Distribution Programme (AJDP) is currently distributing 18 African scholarly journals to 15 university libraries in Anglophone Sub-Saharan Africa. The journals cover a variety of subjects and are published in 10 countries, as far apart as Botswana and Morocco, Senegal and Kenya. Each university library was asked to select up to 12 titles, according to their needs. Evaluation of the pilot will soon begin and a key issue is whether Africa's postal system can support the distribution of journals within the continent. The study will also investigate how the journals have used the extra income and how readers have used the journals. Planning for a full programme is under way. Journals or libraries who would like to be included should contact:

Diana Rosenberg
African Journals Distribution Programme
International African Institute
SOAS
Thornhaugh Street
Russell Square
London WC1H 0XG
UNITED KINGDOM

—adapted from *INASP Newsletter*, no. 3, November 1994

Shipping Guidelines Leaflet Published

The International Network for the Availability of Scientific Publications (INASP) has produced a leaflet that gives a brief overview of the different logistical aspects of shipping materials to overseas partners. It offers practical advice on how to send small as well as large quantities of goods, in particular printed material from the UK to

World News in Brief (Cont.)

other countries. The leaflet also gives recommendations on packing, documentation, the pros and cons of using an agent and insuring freight. The leaflet is available free from:

INASP
P.O. Box 2564
London W5 1ZD
UNITED KINGDOM
Telephone: 44-181-997-3274
Fax: 44-181-810-9795
E-mail: inasp@gn.apc.org

—adapted from *INASP Newsletter*, no. 3, November 1994

Water Quality Information on the Internet

Papers presented at the American Society of Agricultural Engineers Winter Meeting's technical session entitled "Internet and the Agricultural Engineer" are available on the World Wide Web. To access the Web site type:

<http://pasture.ecn.purdue.edu/~engelb/atlanta.html>

—adapted from *ALIN*, v. 20, nos. 10-12, October-December 1994

USAIN Update

Cynthia K. Via, Librarian of the Corporate Library of Pioneer Hi-Bred International, is the new president of the U.S. Agricultural Information Network (USAIN). The two newly elected land-grant representatives to the USAIN Executive Council are IAALD Editor Toni Powell (University of Kentucky) and Amy Blair (Michigan State University). IAALD member Barbara Hutchinson (Arid Lands Institute, University of Arizona) was elected to the at-large position on the USAIN Execu-

tive Council. The National Preservation Program Steering Committee has been appointed. The Co-Chairs are Bill Studer, Director of Libraries, and West Boomgaarden, Preservation Officer, Ohio State University. The other members of the Committee are Brice Hobrock (Kansas State University), Barbara Jenkins (South Carolina State University), IAALD members Jan Olsen (Cornell University, Julia Peterson (Cargill Information Center) and Maria Pisa of the National Agricultural Library. In addition, the President of the USAIN Executive Council will serve as a member. The planning process for the preservation program was funded by the Council on Library Resources, Cargill, USAIN, and Kansas State University. The charge to the Steering Committee is to raise the funds for the project, specifically for the salary of the Preservation Coordinator. Mann Library, Cornell University, will serve a key role by preserving the core literature and has received HEA Title II-C funding for this purpose. Plans are proceeding with the 1995 USAIN Conference to be held in Lexington, KY, April 26-29, 1995. The conference theme is "Cultivating New Ground in Electronic Information: Use of the Information Highway to Support Agriculture." The conference will begin on Wednesday April 26th with a pre-conference workshop on Internet basics and will run through Saturday Afternoon, April 29th. For registration information contact:

Toni Powell
Agriculture Library
University of Kentucky
Lexington, KY 40546-0091

Fax: 606-323-4719

E-Mail: tonilb@ukcc.uky.edu

—adapted from an article by Robyn Frank in *ALIN*, v. 20, nos. 10-12, October-December 1994

Melbourne Free-net Is Up and Running

Melbourne Free-net is up and running and available on the internet on the World Wide Web URL <http://ghmac.lib.rmit.edu.au/mfn.html>

The Inaugural MFN Association Meeting will be held on December 3rd 1994 at 2 p.m. in the Kimpton Theatre, University of Melbourne. MFN has already received its first sponsorship—a very powerful UNIX computer. The next step is to put a modem bank in so people not on the internet can gain access. For more information e-mail Glyn Rimmington, Chair of the MFN Task Force gmr@agriculture.unimelb.edu.au

—taken from *AGRIA Newsletter* 3/94

International Special Librarians Day Planned in the US

International Special Librarians Day will be celebrated again this year in the United States on April 13, 1995. The theme this year is "Mastering Global Information for a Competitive Edge" and the event occurs during the U.S. National Library Week. The event is sponsored by the U.S. based Special Libraries Association and provides an ideal marketing opportunity for information professionals to promote their libraries and their services within their organizations and communities.

News from CABI

DOCUMENTS NOW Available

A royalty paid service was begun in January 1995 by CABI to provide fast access to articles cited in CABI's CAB ACCESS. DOCUMENTS NOW will have a two-day turn around time and will be able to supply more than one copy of an article and more than one article from a jour-

nal issue. Rates for DOCUMENTS NOW have not yet been finalized but will be competitive with other fast-track services worldwide. For more information contact:

CAB International
Library Services Centre
Silwood Park
Buckhurst Road
Ascot, Berkshire SL5 7TA
UNITED KINGDOM
Telephone: 44-01344-872747

Fax: 44-01344-872901

E-Mail: library@cabi.org

—adapted from *Database News*, no. 22, December 1994

Placements in Information Management

CAB International has over twenty years' experience of training information personnel from developing countries in the management of

information in agricultural research environments. In recent years placements have been combined with short formal courses in agricultural, environmental or public health information management to include: document acquisition and management; indexing and abstracting; use of CD-ROM and On-line Databases; database construction management; meeting user needs; and marketing library and information services. These placements, varying in length from one week to several months, have been accommodated at CAB International Centre, at the CAB Library Services Center, or at other centres of excellence within UK.

CABI's extensive network of contacts in both the developed and the developing world would allow placements at appropriate centres of excellence elsewhere to be considered. If you feel that you or any of your information or library staff would benefit from a work experience placement, with or without additional formal training, at CABI or an appropriate centre in the UK or elsewhere, contact CABI Information Services for advice on the most appropriate programme and the likely costs involved.

For more information contact:

Peter S. Gooch
Manager, Placement Program CABI
Information Services
CAB International
Wallingford
Oxon OX10 8DE
UNITED KINGDOM

CABI Phone Numbers to Change

On April 16, 1995 the figure 1 will be inserted after the initial 0 in the UK area codes. The code for Wallingford will change from 0491 to 01491. These changes are being made to cope with the growing demand for fax and telephone numbers.

News From NAL

USDA European Biological Control Laboratory Library/Information Center Being Developed

The USDA European Biological Control Laboratory, under the direction of Dr. Lloyd Knutson, is in the process of building a new laboratory facility at the Baillarguet International Campus for Biological Control near Montpellier, France. The first major research laboratories on the campus will be French (sponsored by Institut National de la Recherche Agronomique (INRA)), Australian, sponsored by CSIRO (Commonwealth Scientific and Industrial Research Organization), and U.S., sponsored by USDA (U.S. Department of Agriculture). The concept of a single shared library/documentation center serving these three laboratories has been discussed as part of overall facilities planning for the Baillarguet Campus. To assist in the planning process, Dr. Knutson invited Pamela Q.J. André and Keith W. Russell from the U.S. National Agricultural Library to Montpellier in September 1993 to provide consultation for the library/documentation center planning activity. The library/documentation center on the Baillarguet Campus would be a common

facility shared by INRA, CSIRO, and USDA researchers and staff. The center would be part of one or more common services buildings on the campus; other common services include a dining hall and kitchen facility, a conference room, and guard/security services. All three laboratories would contribute resources to create and operate the library/documentation center and to support other common services. Information materials from INRA, CSIRO, and USDA would form the beginning of the collection. A Documentation Committee had been formed to begin planning the joint library/documentation center, and work was underway to survey research and administrative staff concerning the collections and services needed to support their work. Discussions have already begun to focus on future, broader responsibilities of the library/documentation center for sharing biological control scholarship with the rest of the world. Recommendations for the library include:

- Develop a statement of cooperation to be signed by all partners.
- Establish electronic linkages for the library/documentation center and the research laboratories by installing a local area network for all facilities on the Baillarguet Campus.
- Initiate a joint activity to outline the library collections.

• Pursue the acquisition of information materials for the library/documentation center through the Federal Library Information Center Committee's (FLICC) FEDLINK program.

• Establish a formal liaison with NAL for reference, database, current awareness, and document delivery services.

—adapted from an article by Pamela André in *ALIN*, v. 20, no. 7-9, July-Sept., 1994

Global Change Database Available at NAL

A sample database of global change information is now available at the National Agricultural Library (NAL) and over the Internet. A pilot project of the Global Change Data and Information System (GCDIS), the database is an effort by the U.S. Global Change Research Program (USGCRP) to make global change data and information more accessible to researchers and others. Project managers are seeking to show that traditional database searching methods can be enhanced by using "natural language with a semantic network of word meanings and relationships" that is commercially available. NAL is coordinating the project. The sample database contains over 10,000 documents related to global change including international treaties, protocols and

News from NAL (Cont.)

agreements; medical studies; and public opinions surveys related to environmental issues. With NAL, other organizations participating in the pilot project are Argonne Laboratories, Cambridge Scientific Abstracts, the Consortium for International Earth Science Information Network, the National Oceanographic and Atmospheric Administration, the National Technical Information Service, the Defense Technical Information Center, Oak Ridge Laboratories of the Dept. of Energy, the U.S. Geological Survey, EPA, NASA, the Library of Congress, Roper Public Opinion Poll, the University of Maryland and the Department of Veterans Affairs. Building on this database project, a related project called "Assisted Search for Knowledge (ASK)" will be undertaken in which a system will be developed that will allow students, researchers, policy makers and the general public to navigate easily through the vast amount of global change data and information to get exactly what they need. To search the sample database over the Internet:

- **Telnet:** esdim2.esdim.noaa.gov
- **Login:** conquest
- **Password:** conquest11 (use lowercase and note that the password numbers are one-one)

For more information contact:

Roberta Rand
Information Systems Division,
Room 013
National Agricultural Library, USDA
10301 Baltimore Blvd.
Beltsville, MD 20705-2351
Telephone: 301-504-6684
Fax: 301-504-7473
E-Mail: rrand@nalusda.gov
TDD/TTY: 301-504-6856

Foodborne Illness Education Information Center Set Up at NAL

Information on foodborne illness education is available from a new information service at the U.S. National Agricultural Library (NAL) and Cindy Roberts is the information specialist in the Foodborne Illness Education Information Center. The

center is a joint program of the USDA Food Safety and Inspection Service (FSIS) and the U.S. Food and Drug Administration (FDA) and is part of NAL's Food and Nutrition Information Center (FNIC). The new center is aimed at educators, trainers and organizations developing education and training materials for food workers and consumers. The center is part of a national campaign to reduce the risk of foodborne illness and to increase knowledge of food-related risks at all stages of food handling and preparation from producers to consumers. Materials listed in the database include computer software, audiovisuals, posters, games, and teaching aids for elementary and secondary school curricula. Also included are training materials for managers and workers at retail food markets and food service institutions. Reports derived from the database are free and available by modem via the Internet from the FNIC gopher. To access the database via gopher, telnet to a favorite gopher, choose "all other gophers", "the gopher servers in the USA", then "Maryland" the "Food and Nutrition Information Center, USDA". From the menu displayed look under "USDA/FDA Foodborne Illness Education Information Center". The center can also be accessed through NAL's electronic bulletin board ALF. Floppy disk copies of the database are available from the center. For more information contact:

Cindy Roberts
USDA/FDA Foodborne Illness
Education Information Center
c/o Food and Nutrition Information
Center
National Agricultural Library,
Room 304
10301 Baltimore Boulevard
Beltsville, MD 20705-2351
USA
Telephone: 301-504-5719
Fax: 301-504-6409
E-Mail: croberts@nalusda.gov
TDD/TTY: 301-504-6856

NAL "Gopher" Gives World-wide Access

The NAL Gopher can be read by anyone having access to a Gopher client and the Internet at:

gopher.nalusda.gov70

Services now available through the NAL Gopher (main menu) are:

- item 4—*Information Centers* which gives access to information made available by NAL's Information Centers.
- item 5—*NAL Publications and Resources* which includes NAL bibliographies and publications.
- item 6—*Other Agriculture Publications and Data* provides links to agricultural items authored outside of NAL.
- item 8—*Other Agriculture-related Gopher Systems* provides links to 31 other Gopher systems including two other U.S. national libraries, the Library of Congress and the National Library of Medicine.

Comments and suggestions on the NAL Gopher can be directed to Bill Feidt, chief of NAL's Automation Branch at

wfeidt@nalusda.gov

FedWorld Gateway Changes

There have been two important changes to the FedWorld Gateway

- There has been a one-digit change in the IP address to FedWorld (see bold below).
- The Main Menu for FedWorld no longer shows Gateway as a choice. To get to the Gateway, to dial-out and connect to ALF, or over 100 other Federal systems, users must FIRST go to the Utilities section of FedWorld.

• NAL's ALF bbs (Agricultural Library Forum) is now accessible via Telnet to FedWorld, the NTIS (Dept of Commerce) bulletin board and Gateway system. Use the command "telnet fedworld.gov", or "telnet 192.239.93.3".

- New callers must first register on the FedWorld bbs system.
- To link to ALF after registration, follow menu options. First go to the Utilities subsystem by entry

of "U" at the main menu. To load Gateway, enter "D" from the Utilities menu, then enter "D" again to link to a federal system, then enter "2" to connect to ALF.

• After initial registration, commands may be stacked. Get to ALF from FedWorld's main menu by entry of "U D D 2 <cr>".

For more information contact:

Karl Schneider

E-Mail: kschneid@nalsuda.gov

NATDP Issues Second Agronomy Journal on CD-ROM

The National Agricultural Text Digitizing Program (NATDP), in cooperation with the American Society of Agronomy (ASA) has published the CD-ROM *Agronomy Journal Volumes 17-22 (1925-1930)*. This second disc in the *Agronomy Journal* series contains Volumes 17 through 22 of the *Journal of the American Society of Agronomy*. The approximately 7500 page images are linked to searchable bibliographic records, which were provided by NAL's Indexing Branch and downloaded from AGRICOLA. Like earlier NATDP CD-ROMs, the disc runs under Windows Personal Librarian (WPL), from Personal Library Software of Rockville, MD. The WPL retrieval software is supplied on the CD-ROM. System requirements include an 80386 microcomputer or faster, 4 MB RAM, 4 MB hard disk space, DOS 3.3 or later, MS-Windows 3.1, a CD-ROM player with Extensions 2.0 or later, and a mouse. The CD-ROM is distributed free-of-charge to each land-grant university library including 1890's. Copies may be purchased from the ASA for US\$25.00 each by contacting:

American Society of Agronomy
677 South Segoe Road
Madison, Wisconsin 53711
USA
Fax: 608-273-2021

—By Judith Zidar and taken from *ALIN*, Volume 20, nos. 10-12, October-December 1994

AGRICOLA/CRIS Database Workshop Schedule for 1995

NAL, Beltsville, MD

AGRICOLA, Basic—

July 10-12, 1995

September 18-20, 1995

CRIS—

July 13, 1995

September 21, 1995

AGRICOLA, Advanced—

July 14, 1995

September 22, 1995

For additional information on the AGRICOLA Workshop call:

301-504-5204;

TDD/TTY: 301-504-6856;

For additional information on the CRIS Workshop call:

301-504-6846

—taken from *ALIN*, v. 20, nos. 10-12, October-December 1994

NAL Continues Its International Efforts

Egypt—The U.S. National Agricultural Library continues to assist the government of Egypt in establishing an Egyptian National Agricultural Library (ENAL) in Cairo. Since 1987, NAL has been providing Egypt with technical assistance and staff training as the Egyptian Government moves ahead in development of ENAL. The assistance began when a two-person contingent from the "Library and Information Systems Working Group" of the Egyptian Ministry of Agriculture visited NAL for two days of meetings. Since then 25 Egyptians have been to NAL for training. The training has included reference services, document delivery, microcomputer use, cataloging, producing CD-ROMs and in selecting and acquiring a basic collection. Other training included instruction in developing statistics, scheduling library staff, and using AGRICOLA. NAL arranged for another group of Egyptian visitors to travel to the University of Maryland, Eastern Shore to view the operations of the Frederick Douglas Library and meet the library staff. The Egyptian Government is planning to open their National Agricultural Library in 1995.

Latin America—An Inter-American Workshop on Agricultural Information was hosted by the U.S. National Agricultural Library and the Inter-American Development Bank (IDB) in cooperation with the Inter-American Association of Agricultural Librarians and Documentalists (AIBDA), the Associates of the National Agricultural Library, and USAIN (The U.S. Agricultural Information Network). The Workshop was made possible through the support of these organizations and through a grant from the USDA Office of International Cooperation and Development (OICD). The workshop was held January 24-28, 1994 and a plan was formulated to establish an inter-american agricultural information network. A summary of the recommendations and conclusions from the program can be found in *ALIN*, v. 20, nos. 7-9, July-September 1994.

For more information contact:

Maria Pisa

Assistant Director for Policy and Planning

National Agricultural Library

10301 Baltimore Blvd.

Beltsville, MD 20705

Telephone: 301-504-6780

Fax: 301-504-7042

E-Mail: mpisa@nalsuda.gov

TDD/TTY: 310-504-6856

Central and Eastern Europe—

A fourth US/Central and Eastern European Agricultural Library Roundtable was held in September 1994 in Nitra, Slovakia as part of NAL's ongoing initiative to build information exchange relationships with the agricultural libraries in the former Communist bloc. Reports on the third round table held at the Institute of Plant Breeding and Acclimatization in Radzików, Poland and hosted by the Central Agricultural Library in Warsaw under the sponsorship of the Ministry of Agriculture of Poland with a grant from VTLS, Inc. are published in *ALIN*, v. 20, nos. 7-9, July-September 1994. The theme of the Roundtable was Networking Agricultural Information: Next Steps and focused on assessing the present situation with

News from NAL (Cont.)

respect to linking agricultural information resources through technology in Central and Eastern Europe and exploring future possibilities for

increasing connectivity. For more information about the Central and Eastern European Agricultural Library Roundtable contact:

Maria Pisa
Assistant Director for Policy and Planning

National Agricultural Library
10301 Baltimore Blvd.
Beltsville, MD 20705
Telephone: 301-504-6780
Fax: 301-504-7042
E-Mail: mpisa@nalsuda.gov
TDD/TTY: 301-504-6856



Publications/Products/Services

Catalogs

CAB International Information Products Catalogue, 1995

includes paper and electronic products.

Available from:
CAB International
Wallingford, Oxon OX10 8DE
UNITED KINGDOM
Telephone: 01491-832111
Fax: 01491-833508
Telex: 847964 (COMAGG G)
E-Mail: cabi@cabi.org

Special Libraries Association (US) 1995 Publications Catalog.

Available from:
Special Libraries Association
1700 Eighteenth Street, NW
Washington, DC 20009-2508
USA
Telephone: 202-234-4700
Fax: 202-265-9317
E-Mail: SLA1@capcon.net

1995 BIOSIS Catalog includes print and electronic products.

Available from:
BIOSIS
2100 Arch Street
Philadelphia, PA 19103-1399
USA
Telephone: 800-523-4806 (USA and Canada)
215-587-4847 (Worldwide)
Fax: 215-587-2016
E-Mail: info@mail.biosis.org
World Wide Web URL:
<http://www.biosis.org>

American Library Association Annual Editions Update a mid-year catalog from the American Library Association.

Available from:
American Library Association
50 East Huron St.
Chicago, IL 60611
USA
Telephone: 800-545-2433; press 7
Fax: 312-836-9958

Libraries Unlimited Professional Catalog, 1995.

Available from:
Libraries Unlimited
Dept. 95, P.O. Box 6633
Englewood, CO 80155-6633
USA
Phone: 800-237-6124
Fax: 303-220-8843

ISNAR Supplement to the 1993-94 Catalog of Publications

Available from:
ISNAR
P.O. Box 93375
2509 AJ The Hague
THE NETHERLANDS

Neal-Schuman Publishers Catalog, 1995 award winning reference books, how-to-do-it manuals for librarians, professional books and resources.

Available from:
Neal-Schuman Publishers
100 Varick Street
New York, NY 10013
USA

KIT Press Publications List includes publications from the Royal Tropical Institute for 1994 and 1995.

Available from:
Koninklijk Instituut Voor de Tropen
Mauriskade 63
1092 AD Amsterdam
THE NETHERLANDS
Telephone: 31-20-5688-272
Fax: 31-20-5688-286
Telex: 15080 KIT NL

Publications

First International Conference of Animal Health Information Specialists Proceedings papers presented at the conference in Reading, England, July 16-19, 1992.

Available from:
M. Williams
Veterinary Medicine Library
1257 Vet. Med. BSB
University of Illinois at Urbana-Champaign
2001 St. Lincoln Ave.
Urbana, IL 61801
USA
Fax: 217-333-2286
E-Mail: mwillms1@uiuc.edu
Price: US\$25 (prepayment required)

The Value of Information to the Intelligent Organisations proceedings of a Conference Jointly Organised by HERTIS and TFPL.

Available from:
HERTIS Information and Research
No address given
Fax: 0707-284-679
Price: none given

Books and Periodicals Online edited by Nuchine Nobari includes online service providers, CD-ROM publishers, document delivery services, and fee-based services that will provide online searching when needed.

Available from:
Library Alliance
264 Lexington Ave.
New York, NY 10016-4182
USA
Telephone: 212-685-5297
Price: US\$299

International Directory of Government 1995 records the continuing changes, particularly in the countries of Eastern Europe and the former USSR.

Available from:
Europa Publications LTD
18 Bedford Square
London WC1B 3JN
UNITED KINGDOM
Telephone: 071-580-8236
Fax: 071-636-1644
Telex: 21540 Europa G
Price: US\$345

Biotechnology and Sustainable Agriculture: A Bibliography (SRB 94-13) lists 127 articles by recognized authorities on the future of biotechnology in sustainable agriculture.

Available from:
Biotechnology Information Center
National Agricultural Library, USDA
10301 Baltimore Blvd.
Beltsville, MD 20705-2351
USA

Send a self-addressed label.

Resources Guide to Aquaculture Information lists over 500 resources for information on all aspects of aquaculture. Includes addresses, telephone numbers, and e-mail addresses where available.

Available from:
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National Agricultural Library, USDA
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Beltsville, MD 20705-2351
USA
Telephone: 301-504-5558
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A Rural Studies Bibliography is a listing of 215 books and articles related to all aspects of rural studies.

The Directory of Rural Studies Scholars and Educators lists U.S. scholars and educators in a range of disciplines who are involved in rural-issues teaching or research.

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National Agricultural Library, USDA
10301 Baltimore Blvd.
Beltsville, MD 20705-2351
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Telephone: 301-504-5372
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E-Mail: ric@nalsusda.gov

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Laboratory Animal Welfare Publications list materials on the use and care of animals. Many of the materials were identified in the U.S. National Agricultural Library's

database. The following publications are available from:

Animal Welfare Information Center
National Agricultural Library
10301 Baltimore Blvd.
Beltsville, MD 20705-2351
USA
Telephone: 301-504-6212
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Animal Models in Biomedical Research: Swine (SRB 94-01)

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Anesthesia and Analgesia for Companion and Laboratory Animals (QB 94-18)

Animal Models of Disease (QB 94-19)

The Dog (QB 94-24)

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Animal Welfare Legislation and Regulations (QB 94-23)

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MSIRIS: A Catalogue of Serials in the MSIRI Library compiled by R. Ng Kee Kwong and M. Jean-Louis contains a listing of the 1211 entries of the MSIRIS' database and is a compilation of the serial collection of Mauritius Sugar Industry Research Institute's Library since 1953.

Available from:
The Librarian
Mauritius Sugar Industry Research Institute
Réduit
MAURITIUS
Telephone: 230-454-1061
Fax: 230-454-1971
E-Mail: msiri@agnet.wn.apc.org
Price: none given

Council of Library Resources Annual Report, the thirty-eighth report of activities of the U.S. Council on Library Resources.

Available from:
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Developing the Rural Network: a Directory of Rural Development Resources in the Caribbean edited by Regina Dumas, publicizes the Non-Governmental Organization resources available to rural communities in the Caribbean in 1993.

Available from:
CNIRD
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St. Augustine
Trinidad and Tobago
WEST INDIES
Price: None given

The following publications are available from:

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UNITED KINGDOM
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Fax: 44-71-608-3149

or
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Chicago, IL 60602
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Price: none given

Bibliography of Systematic

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Available from:
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Baltimore MD 21218
USA
Telephone: 410-243-0797
Fax: 410-243-0982

Price: US\$695, multiple user subscriptions also available

Price: varies depending on services required

Soil Map of the World has been digitized by the Land and Water Development Division of the FAO. The map is divided into ten major continental regions and all maps are in Geographic Projection, allowing conversion to any projection and are accompanied by NOTE files. The system requires a PC 386 or 486 compatible computer with math coprocessor; VGA Video graphic card and color monitor; 4 MB of RAM, 100 MB hard drive; Microsoft compatible mouse; CD-ROM drive; PC ARC/INFO software and DOS 3.1 or above.

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ITALY
Price: US\$350 with a 35% discount to developing countries

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Available from:
ICLARM
MC PO Box 1501
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Metro Manila
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Price: Free to fisheries in developing countries; US\$95 to all others

Attention Listserv Users:

On page 351 of *Quarterly Bulletin*, v. 39, no. 4 a list of listservs appeared. The listserv addresses are BITNET addresses. If you are at a BITNET site, the addresses are complete. If you are not at a BITNET site, you will have to use a gateway to get to the list. There are several ways to do this. You may have to try more than one way as the syntax varies.

Syntax: Add .BITNET to the address.

Example: ACDGIS-L@AWIIMC12.BITNET

Using a gateway at your institution. My domain is ukcc.uky.edu and I am using it in the example. You will replace ukcc.uky.edu with your domain.

Example: ACDGIS-L%AWIIMC12@ukcc.uky.edu
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The Association has a membership of over 600 in 80 countries. On becoming a member, you will receive the *IAALD Quarterly Bulletin* and *IAALD News* free of charge and will be able to participate in the activities of the Association.

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*The IAALD Executive Committee plans to carry out a special initiative on education and training with emphasis on developing countries and asks each member to make an optional donation of £5/\$10 or more to further this effort.



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*Le comité exécutif d'IAALD envisage de mener des actions de formation en mettant l'accent sur les pays en développement et demande à chaque membre de donner une contribution spéciale de £5 ou \$10 plus.



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The papers presented at a symposium sponsored by IAALD, CTA, and ZADI and held in Bonn, Germany, November 10-12, 1993. The volume contains 35 papers on topics from information policy to fuzzy logic and was published as *Quarterly Bulletin of the International Association of Agricultural Information Specialists*, v. 39, nos. 1-2, 1994. The price for this volume is US\$40.

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◆ IAALD Symposium on
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The papers presented at the IAALD Symposium on Advances in Information Technology, presented September 16-20, 1992 in Beltsville, Maryland are now available. The papers cover electronic systems, the development of these systems, progress reports of current technology projects, copyright issues, and standards emerging for these technologies. This volume was issued as *Quarterly Bulletin of the International Association of Agricultural Information Specialists*, v. 37, nos. 1-2, 1992. The price for this volume is US\$30.

and...

◆ Proceedings of the VIIIth World Congress of IAALD:
Information and the End User

held May 28-31, 1990 in Budapest Hungary. This volume contains 38 papers, some from specialists in developing countries, and deals with information at the end user level. This volume was issued as *Quarterly Bulletin of the International Association of Agricultural Information Specialists*, v. 36, nos. 1-2, 1991. The price for this volume is US\$30.

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Agricultural Information Resource Centers A WORLD DIRECTORY 1995

Carol Boast, Rita Fisher, Jane Johnson

The International Association of Agricultural Information Specialists (IAALD), in cooperation with the Technical Centre for Agricultural and Rural Cooperation (CTA), is pleased to present an updated and enlarged directory of agricultural libraries and documentation centers. The Directory includes complete addresses and phone numbers for over 3,500 libraries and documentation centers from 250 countries. Most entries also include size, subjects, and language of collections; type of institution; type of materials collected; services provided; name and phone number of the director; and information on databases maintained and/or searched. Available telex and telefacsimile numbers, and e-mail addresses are also given. The primary language of the directory is English, but names of institutions in other romanized languages have been included if provided.

The Directory is arranged by countries and then cities, and indexed by names of parent institution and of library, former names, acronyms, and subjects. Each index is subdivided by country and in some cases by state.

This 8.5 by 11-inch hardbound directory has taken five years to update and is an extremely valuable reference tool. Many individuals have contributed to the completeness and accuracy of this directory.

Sales of the 1990 *Directory* resulted in a USA \$45,000 profit which is being used by IAALD to sponsor workshops and participation for IAALD members from developing countries. The profits from the 1995 *Directory* will be added to this fund. CTA is distributing the 1995 *Directory* to countries covered by their programs (ACP countries). Donors are being sought to subsidize distribution in other parts of the world. Prospective donors are encouraged to contact Carol Boast at the Twin Falls address below, by phone (+01-217-333-7687) or by e-mail (carolbr@ux1.cso.uiuc.edu).

The quality of the 1995 *Directory* has been greatly enhanced by the help of liaisons in each country. Some contacts are still needed. If you can help, contact Rita Fisher: phone (+01-509-335-8000), fax (+01-509-335-2534), or e-mail (Fisher@WSU.EDU).

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Publications of the Regional and National Associations of Agricultural Librarians and Documentalists that are Members of IAALD

- Guide a l'Intention des Bibliothécaires Agricoles.* 1981. O. Lendvay. Agence de Coopération Culturelle et Technique, avec la collaboration de l'Association Française des Documentalistes et des Bibliothécaires Agricoles. Agence de Coopération Culturelle et Technique, 13 quai André Citroën, 75015 Paris, France.
- Primer for Agricultural Libraries.* 1983. O. Lendvay. Japanese Edition. Japan Association of Agricultural Librarians and Documentalists. JAALD, Library of Tokyo University of Agriculture, 1-1-1, Sakuragaoka, Setagaya-ku, Tokyo 156, Japan.
- Guia para Bibliotecas Agrícolas.* 1983. O. Lendvay, Portuguese Edition. Instituto Nacional de Investigação e Extensão Rural. Rua das Janelas Verdes 92, 1200 Lisboa, Portugal.
- Guia Básica para Bibliotecas Agrícolas.* 1969. D. Parker, F.C. Hirst, T.P. Loosjes and G. Koster. Spanish Edition. Instituto Interamericano de Ciencias Agrícolas, Biblioteca y Servicio de Documentación, Turrialba, Costa Rica.
- Papers presented at the Regional European Symposium of IAALD, 14-18 May 1973, Wageningen, the Netherlands.* 1973. PUDOC, Center for Agricultural Publishing and Documentation, P.O. Box 4, 6700 AA Wageningen, The Netherlands.
- European Regional Congress of Agricultural Librarians and Documentalists.* 1978. K.G. Saur Verlag KG, Possenbacher Str. 26, P.O.B. 711009, D-8000 München 71, BRD.
- Bulletin of the Japan Association of Agricultural Librarians and Documentalists.* Quarterly, JAALD, Library of Tokyo University of Agriculture, 1-1-1, Sakuragaoka, Setagaya-ku, Tokyo 156, Japan.
- Revista AIBDA.* Semiannual. Asociación Interamericana de Bibliotecarios y Documentalistas Agrícolas, Secretaría Ejecutiva, c/o IICA-CIDIA, Turrialba, Costa Rica.
- Boletín Informativo de AIBDA.* Secretaría Ejecutiva de AIBDA, c/o Centro Interamericano de Documentación e Información Agrícola (IICA/CIDIA), Turrialba, Costa Rica.
- Mitteilungen der Gesellschaft für Bibliothekswesen und Dokumentation des Landbaues (GBDL),* c/o Sekretariat der GBDL in Paracelsusstr. 2, D-7000 Stuttgart 70, BRD.
- Guía para Bibliotecas Agrícolas.* 1987. O. Lendvay. Spanish Edition. Translated to Spanish and adapted by Ana María Paz de Erikson. AIBDA, Turrialba, Costa Rica.

IAALD Publications

Quarterly Bulletin of IAALD.

Issued gratis to members. Most of the issues of the early years of the *Quarterly Bulletin* are now out of print. Back issues are available for the most recent three years from: A.P. Powell, Editor, IAALD, 3755 Leestown Road, Lexington, KY 40511, USA. From 1956 on, it is available on microfilm from: University Microfilms International, P.O. Box 1346, Dept. P.R., Ann Arbor, MI 48106-1346, USA; or 30-32 Mortimer Street, Dept. P.R., London W1N 7RA, UK.

Agricultural Information Resource Centers: A World Directory. Edited by Carol Boast, Rita Fisher, and Jane Johnson. Twin Falls, ID, USA: IAALD, 1995. Price: see Order Form inside—prepayment required. Obtainable from: IAALD World Directory, 1347 Maple Avenue, Twin Falls, ID 83301, USA.

IAALD News, No. 1-, 1980-, occasional President's newsletter. Gratis to IAALD members.

Eighth World Congress of the International Association of Agricultural Librarians and Documentalists: Information and the End User, Budapest, Hungary, 1990. Wageningen, The Netherlands: IAALD, 1991. 162 pp. Obtainable from: A.P. Powell, Editor, IAALD, 3755 Leestown Road, Lexington, KY 40511, USA. Price: US\$30 prepaid. Some discounts apply.

IAALD Symposium on Advances in Information Technology. Papers presented September 16-20, 1991, Beltsville, Maryland, USA. Wageningen, The Netherlands: IAALD, 1992. 124 pp. Obtainable from: A.P. Powell, Editor, IAALD, 3755 Leestown Road, Lexington, KY 40511, USA. Price: US\$30 prepaid. Some discounts apply.

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